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THE EDITOR cannot undertake to return, or to correspond with the writers of, rejected manuscript.

LITERATURE.

The History of France from the Earliest Times to the Year 1789. Related for the rising generation by M. Guizot. Translated by Robert Black, M.A. Vols. I.-III. (London: Sampson Low & Co., 1872-74.)

It is to be hoped that the title which the translator has given to M. Guizot's book may not deter any of the risen generation from reading what is, in some respects, the best history of France as yet written. M. Guizot's special strength lies in the art of historical portraiture. Each king or warrior as he passes across the scene leaves a distinct impression upon the reader, arising not from the repetition of some striking epigrammatic sentence or epithet after the fashion of Mr. Carlyle, but from the careful selection of such facts and anecdotes as are likely to bring into clear relief the personality of the actor. Nor does M. Guizot forget that even the best series of biographies does not make a history, and he is accordingly anxious to dwell upon those changes of institutions which, in the life of a nation, correspond with the changes of circumstances in the life of a man.

Where everything is so excellent it may seem presumptuous in a foreigner to ask whether M. Guizot has not sometimes been led to violate the rules of historical perspective by dwelling too much on the bright side of two phenomena of which he distinctly approves, the growing preponderance of the Tiers Etat, and the rise of the States General. Such a passage, however, as the following surely requires modification (ii. 42):—

"The more closely the French third estate is examined, the more it is recognised as a new fact in the world's history appertaining exclusively to the civilisation of modern Christian Europe.

"Not only is the fact new, but it has for France an entirely special interest, since, to employ an expression much abused in the present day, it is a fact eminently French, essentially national. Nowhere has burgherdom had so wide and so productive a career as that which fell to its lot in France. There have been communes in the whole of Europe, in Italy, Spain, Germany, and England, as well as in France. Not only have there been communes everywhere, but the communes of France are not those which, as communes, under that name and in the middle ages, have played the chief part and taken the highest place in history. The Italian communes were the parents of glorious republics. The German communes became free and sovereign towns, which had their own special history and exercised a great deal of influence upon the general history of Germany. The communes of England made alliance with a portion of the feudal aristocracy, formed with it the preponderating house of the British government, and thus played, full early, a mighty part in the history of their country. Far were the French communes, under that name and in their day of special activity, from rising to such political importance and to such historical rank. And yet it is in France

that the people of the communes, the burgherdom, reached the most complete and the most powerful development, and ended by acquiring the most decided preponderance in the general social structure. There have been communes, we say, throughout Europe, but there has not really been a victorious third estate anywhere, save in France. The Revolution of 1789, the greatest ever seen, was the culminating point arrived at by the third estate; and France is the only country in which a man of large mind could in a burst of burgher's pride, exclaim, 'What is the third estate? Everything!'"

Even if the third estate of the Abbé Sieyès had not been something far larger than the bourgeoisie of which M. Guizot is speaking, such a paean seems to be singularly out of place. The half, according to the Greek proverb, is more than the whole, and one would have thought that the English citizen who shared with members of other classes in controlling the government of his country, was better off than the French citizen who had gained the foremost rank as the humble servant of an almost absolute monarch. No doubt M. Guizot points out that the burgesses took their places in the States General, and that the States General tried their best to consult for the common interests of the nation. But even in his pages it comes clearly out that these States General were very poor affairs, though M. Guizot is, perhaps naturally, too much occupied with tracing the germs of free institutions which they contained to dwell as fully as he might have done upon the reasons of their failure.

The history of mediaeval France, as it stands before us in M. Guizot's pages, is the history of division, of local divisions superseded by class divisions. We may hold that the change was a benefit, that the rule of the King and the Tiers Etat was better than the rule of the feudal aristocracy and the communes. But it ought clearly to be perceived that anything like a parliamentary government was impossible under such conditions. It is easy to say that Philip IV. (ii. 48),

"by giving admission amongst the States General to the 'burghers of the good towns,' substituted the Third Estate for the communes, and the united action of the three great classes of Frenchmen for their local struggles;"

but bringing together the representatives of classes could not weld them into the representatives of a nation, unless there was first a united nation to represent.

The evils of the local divisions are clearly shown by M. Guizot. He points out that the antipathy against the feudal system is not merely the fruit of the great Revolution (i. 285):—

"Go back," he says, "to any portion of French history, and stop where you will; and you will everywhere find the feudal system considered by the mass of the population a foe to be fought, and fought down at any price."

It is not in the misery caused by the system that M. Guizot finds the explanation of this. There have been despotisms as bad, he says, and miseries even worse. The real cause was, that in a centralised state the despotism, however bad, was a long way off. To the French peasant of the Middle Ages (i. 286),

"their sovereign was at their very doors, and

none of them was hidden from him, or beyond reach of his mighty arm. Of all tyrannies the worst is that which can thus keep account of its subjects, and which sees, from its seat, the limits of its empire."

And this localisation of power which was the ruin of feudalism proved the ruin, too, of that movement which at first promised better things, the movement which produced the communes. True to his principle of teaching by example, M. Guizot gives us the history of the commune of Laon. It bought its freedom from "the clergy and the knights" who ruled in the name of the absent bishop, and its citizens bade defiance to king and bishop when they tried to strip them of their rights. After murdering the bishop, they obtained recognition of their independence. But their existence was a turbulent one, and turbulence brought about its usual consequence of weakness. The commune was abolished, and the town was given over to the government of the delegates of the King.

The government of the delegates of the King was the form in which the rule of the Tiers Etat took shape. As the kingship sprang out of the feudal ranks, so the Tiers Etat sprang out of the ranks of the communes. The two together represented unity after a fashion. But they could only represent it in a combative way. The centrifugal tendencies were still so great, that in the struggle against disruption there was no room for the development of political liberties, no room for the foundation of a national government upon the union of classes. The unifying efforts of the kings were always carrying them nearer to centralised despotism. The unifying efforts of the Tiers Etat were always carrying them nearer to the government of a single class.

This is the reason why the history of the States General is hardly more than a subject for antiquarian investigation. The States General of the Middle Ages answer to the wants of a future day, not to the wants of the days in which they meet. If they are active at all, it is when the king is in captivity, or when the king is a minor.

For the struggle against local disruption is not merely to be settled by the predominance of the king, or the predominance of the Tiers Etat in his name. The enemy has a footing within the camp. The king, sprung from the bosom of feudality, surrounded by feudal associations, is evermore falling back into the ranks of those from whom he came. The Tiers Etat, sprung from the communes, is evermore harking back to its starting point, fostering the jealousies of one province against the other, and forgetting its great work.

In the first two volumes the progress of the kingship is the main object before our eyes. We see it in the hands of men of saintly virtue like Louis IX., or of men of worldly wisdom like Philip IV., ever rising in power when it sets itself against feudality and division. We see it in the hands of Philip VI. and John striking sail to the hostile principle, and sinking down to a mere leadership of a warlike aristocracy, without pity for the people or thought for the prosperity of the realm.

The government of Charles V. may be taken as typical of all that was best in the old French monarchy. It (ii. 195)

"was the personal government of an intelligent, prudent, and honourable King, anxious for the interests of the State at home and abroad, as well as for his own, with little inclination for and little confidence in the free co-operation of the country in its own affairs, but with wit enough to cheerfully call upon it when there was any pressing necessity."

One day, M. Guizot tells us (ii. 194),

"the treasurer of Nîmes had died, and the King appointed his successor. His brother, the Duke of Anjou, came and asked for the place on behalf of one of his own intimates, saying that he to whom the King had granted it was a man of straw and without credit. Charles caused inquiries to be made, and then said to the Duke: 'Truly, fair brother, he for whom you have spoken to me is a rich man, but one of little sense and bad behaviour.' 'Assuredly,' said the Duke of Anjou, 'he to whom you have given the office is a man of straw and incompetent to fill it.' 'Why, prithee?' asked the King. 'Because he is a poor man, the son of small labouring folks, who are still tillers of the ground in our country.' 'Ah!' said Charles, 'is there nothing more? Assuredly, fair brother, we should prize more highly the poor man of wisdom than the profligate ass;' and he maintained in the office him whom he had put there."

It was the *carrière ouverte aux talens* anticipated. The members of the Tiers Etat were to take the place of the profligate asses. They rose in defiance of feudalism, they did not amalgamate with it.

Again and again, as we read these pages, our thoughts are carried away to the France of our own day. The great Revolution put a final end to the local divisions, but the class divisions which succeeded them are still rampant. To obliterate these, to cherish a national spirit which shall turn aside from unprovoked attacks upon neighbour States to the cultivation of wise sympathy with the wants and aspirations of noble and burgher, peasant and workman alike, is the first requisite for the foundation of moral order. *Ce qui divise le moins* might have been the watchword of the old monarchy in its best days. It will be the watchword of any form of government which may at last permanently succeed it.

M. Guizot's second volume ends with the reign of Louis XII., in whom the divergence between the origin and the aim of the kingship is marked by the strongest lines of demarcation. At home he is the father of his people, taking off taxes and administering justice. Abroad he is the leader of chivalry, squandering the blood and money of France in useless adventures. We are thus brought down to the threshold of modern times. M. Guizot's third volume, deals with the appearance of one more cause of strife. Protestantism, as he shows, never had a chance of becoming a national religion. Francis I. was not the man to take it up. He had just bargained away the independence of the French Church in the wretched Concordat, by which he made over the souls of Frenchmen to the Pope, on condition that the patronage of benefices should be his. But the cause of the evil lay deeper than this. Protestantism, loosing old ties as it did, and throwing men adrift in the isolation of personal faith, was nowhere in the six-

teenth century permanently accepted by any people which had not a firm grasp upon the idea of the commonwealth as a foundation of law and order. In France the state was little more than a term for a truce between opposing factions. And if men could not idealise the state, there was nothing left for them but to idealise the Church. The average Frenchman had nothing before him which could take its place as a disciplinary institution.

The old, sad story of the religious wars loses none of its interest in M. Guizot's hands, though it may be remarked in passing that it is a pity that he has allowed himself (iii. 376) to resuscitate the fiction of an agreement between Catharine de Medici and Alva for common action against the Huguenots. It is with a sigh of relief that we reach at last the days of Henry IV., the great pacificator, whose work was to unite divided France, and who took his stand above classes and factions to teach France that she was really one. As we read these pages we feel how unity was the hidden treasure in quest of which France had gone forth, we understand how it was that the young Republic of 1792 was impelled to style itself "one and indivisible," and how, after all the struggles and sufferings of the past, she is still upon the track, careless of political liberty, careless of many things which other nations prize, till class can meet class and opinion meet opinion on the broad grounds of nationality.

In this way we are brought round at the end of M. Guizot's three volumes to the point at which we started. When he tells us (iii. 1) that "France, in respect of her national unity, is the most ancient amongst the states of Christian Europe," he says that which, except in a superficial sense, is simply misleading. In any sense worth talking of, England achieved national unity when France was still, according to Sismondi's well-chosen phrase, *confédérée sous le régime féodal*. England's two great flights in the direction of political liberty—the flight which commenced with the Great Charter, and the flight which commenced with the Petition of Right—were each taken after periods in which the unifying spirit was predominant. The key to French history in the past, as well as to the French history which is being unrolled before our eyes, should surely be sought for in its defective unity. The sense of this want betrays itself alike in the desperate efforts of France to supply the defect by an external centralisation, and in the failure to found orderly liberty amidst the strife of parties.

SAMUEL R. GARDINER.

An Echo of the Olden Time from the North of Scotland. By Rev. Walter Gregor, M.A., author of "Glossary of Banffshire Dialect." (Edinburgh: Menzies & Co., 1874.)

INTO the compass of a very small volume Mr. Gregor has contrived to pack a great deal of interesting and valuable information about the North of Scotland, as it was in the olden time which preceded the last few years of rapid locomotion and general culture. A pleasanter and more instructive

companion through the field of folk-lore we have not for some time encountered. Beginning with a picture of the farm-house as it used to be, he gives a graphic sketch of an evening in the farm kitchen, describes the dame's school and the parish school, traces the young students from those educational establishments to college, and follows into the manse those among them who take to theology as a profession. An account of what a Scotch Sunday used to be comes next, and after that a series of pictures of domestic life, wherein is portrayed the progress of a Scotch peasant pilgrim from his cradle to his grave. In building the farm-house, it seems it was necessary to begin by regaling the workmen with a *funin pint*. This, which answered to the sacrifices offered to the gods in heathen times under similar circumstances, could not be omitted with impunity. In the case of a manse on the banks of the Spey, tradition tells that the minister rashly refused to give the usual *funin pint*, but the masons avenged themselves by building into the wall a piece of a gravestone. "The consequence was, the house proved unhealthy, and the ministers very short-lived." When removing from one domicile to another, it may be remarked it was accounted unlucky to obtain a clean house. If the out-going tenant was jealous of his successor he swept the house clean before leaving it; for "dirt's luck" was a proverbial saying. There were two other methods of robbing a house of its luck. One was to get on the roof and "pull up the *crook* through the *lum*, instead of removing it in the usual way by the door; the other was to twist a straw rope from left to right, and then pull it round the house contrary to the course of the sun. Sometimes the outgoer not only carried off the luck of the house, but he left a curse on its future inmates. If that was suspected, it was thought prudent to fling a cat into the house before the family crossed the threshold. Where the suspicions were correct, "the cat in no long time sickened and died." Among the means employed to light the farm-kitchen in the winter evenings were "fir-can'les," thin bog-fir splinters, closely resembling the *luchina* still used for the same purpose in Russia. These were fixed in a sort of candlestick called the "peer-man" or "peer-page." By the light of these primitive candles and of the peat fire the family pursued their various avocations, the children conning their lessons and the grown-up people performing various tasks. Then the books would be laid aside, and with story and ballad the long evening would be whiled away. The stories were listened to with breathless interest, for they generally referred to supernatural influences about which little scepticism existed. The progress of education had not then destroyed the ancient superstitions of the land. While a woman was in labour all the locks in a house were undone. On the birth of a child the mother and offspring were "sained," a lighted fir-candle being carried three times round the bed, and a bible, together with a biscuit or bread and cheese, being placed under the pillow, while a kind of benediction was uttered. Among some of the fishing popula-

tion a fir-candle, or a basket with food in it, was placed on the bed to keep off fairies; sometimes a pair of trowsers was hung up at its foot with similar intent. The first time the mother went to fetch water, she carried it back in her thimble, or some other tiny vessel, "to prevent the child's mouth from continually running saliva." Other precautions also were deemed necessary in the case of a new-born babe. It was thought as well to pass it three times through its mother's petticoat or chemise, to guard against its being "forespoken." If it became cross and began to "dwine," fears arose that it might be a fairy changeling. In that case it was placed suddenly before or over a peat fire, when, if really a changeling, "it made its escape by the lum, throwing back words of scorn as it disappeared." It was never put into a quite new cradle. An old one was borrowed, or else a new one was deprived of evil influences by a live fowl being placed in it. A cradle, moreover, was never sent empty, nor was it allowed to touch the ground till it reached the house in which it was to be used. The child was baptised as soon as possible, for unchristened babes were considered uncanny. While in that state their names were never mentioned, and even "at baptism the name was commonly written on a slip of paper, which was handed to the minister." When the christening took place care was taken to prevent the water entering the child's eyes; otherwise they might be opened to a lifelong seeing of ghosts. If the child remained quiet it was likely to be short-lived, so "it is said that if it did not cry the woman who received it from the father handled it roughly or even pinched it." If a boy and girl were baptized together it was held necessary that the girl should undergo the rite first. For it was believed that "if the boy was baptized before the girl he left his beard in the water and the girl got it."

About courtship and marriage the usual superstitions were prevalent. A curious spell to be employed by a girl who desired to call up the image of her future husband was the following. She had

"to read the third verse of the seventeenth chapter of the Book of Job after supper, wash the supper dishes, and go to bed without the utterance of a single word, placing below her pillow the Bible, with a pin stuck through the verse she had read."

A bridal dress might on no account be tried on before the wedding-day, and if it did not fit, it could not be cut or altered, but had to be adjusted the best way possible. When the bride set out for the church she was strictly forbidden to look back, for "such an act entailed disaster of the worst kind during the married life." A good survival of old heathen practices may be recognised in the custom which prevailed of leading the young wife, on her return from the church, to the hearth, and giving her the tongs, "with which she made up the fire."

Death, of course, was supposed to be heralded by many omens. Three dull and heavy knocks, of eerie sound, might be heard "at regular intervals of one or two minutes' duration." Or the "dead-drap," a leaden and hollow sound as though of water falling slowly and regularly, might

presage a coming dissolution. Sometimes the light of a "dead-can'le" might be seen moving about the house in which the death was to take place, or a white dove "hovering over one that was soon to leave earth." The crowing of a cock before midnight was heard with alarm, and "the roost was immediately inspected to ascertain in what direction the bird was looking, and whether his comb, wattles, and feet were cold." If they were so, a death was near at hand. When anyone died the doors and windows were immediately thrown wide open; a piece of iron was stuck into the provisions in the house "to prevent death from entering them;" if there was a clock, it was stopped; if there was a looking-glass, it was covered. All the hens and cats were shut up, for if one of them passed over the corpse, the first person who saw the bird or beast afterwards would lose his sight. After the burial, in some places, bread and water were placed in the room in which the body had lain. "The dead was believed to return that night and partake of the bread and water."

Very few of the various superstitions which Mr. Gregor has chronicled are absolutely novel, but it is very interesting to possess authentic information of the existence, either now, or at least within the memory of man, of such wild beliefs among canny Banffshire peasants as are still firmly held by the benighted inhabitants of less instructed lands. That a Russian or Breton villager should cling to his ancient faith is not to be wondered at, but that the influence of heathenism should prevail so late among well educated Scotchmen is a striking proof of the tenacity of popular belief. In an interesting paper on "The Healing Art in the North of Scotland in the Olden Time," Mr. Gregor has collected a number of singular rites and spells prevalent in Banffshire. To all of them parallels may be found in other lands, but their long survival in Scotland is very strange. For even in the "olden time" of which Mr. Gregor treats, education was eagerly sought after there, and obtained even where the greatest difficulties beset its quest. One of the most interesting portions of his book is that in which he describes the life of the village scholar. First, he shows us the old dame spinning beside her peat fire, and bestowing primary instruction upon the children seated on stools around the hearth. Then he describes the parish school, in which, "at a cost of less than twenty shillings a year, such an education was furnished as fitted the scholar for entering the University;" the said scholar having to prepare his lessons on his long walk to school, or during the brief intervals of repose by which his agricultural labours were alternated, or in the winter evenings by a feeble and flickering light. And lastly, he lets us see the young collegian, journeying on foot, or at best in a cart, towards far-off Aberdeen, there to live with a frugality to more southern Universities unknown; a few potatoes with a salt herring often serving for his dinner, so that "sixteen or twenty pounds, and at times a smaller sum, aided by what provisions came from home, covered all expenses."

As Mr. Gregor says, while speaking of

the "olden time," it was a narrow world to live in, "one which the great wave of the outside world seldom disturbed," but there was much in it that was good. And at all events it was actuated by "a sturdy spirit of independence, in wide contrast to the craven, beggarly spirit of the present day, that has no shame in asking, in the smallest pinch, help from the poor-rates," as well as by "a high sense of honesty and worth, and self-respect," and "a deep appreciation of female purity now too rare among the workers of both sexes." It is very possible to become somewhat less heathenish and very much more degraded.

W. R. S. RALSTON.

Persia: Ancient and Modern. By John Pigott, F.S.A., F.R.G.S., F.G.S. (London: Henry S. King & Co., 1874.)

THERE is no pretence to originality in this little volume. It is merely an attempt, and, we are bound to add, a creditable one, to compile from various authorities a readable account of a country always of great interest, and likely in the present state of political tension in Central Asia to be forced ere long into a very prominent position. The first three chapters contain a history of Persia from the earliest times to the Shah's visit to Europe, and the Renter concession. The rest of the book is occupied by separate chapters devoted to religion, art, literature, commerce, sport, &c. We look in vain for some account of the physical and political geography of the land. The reader is nowhere told to what extent the people are homogeneous in origin and tongue, or whether Iran is a plain or mountain country. And yet no spot on earth has seen more constant and bitter conflict of races, or been more influenced in its history by the configuration of its surface. With the addition of a few pages on geography and ethnology, the book would be a fairly trustworthy handbook of Persia. Among many minor errors, we cannot help noticing the following. At the third page the author says, *à propos* of Cyrus the Younger:—

"Ten thousand Greeks accompanied his army, which force was defeated at the battle of Cunaxa, B.C. 401. The Greeks, it is hardly necessary to say, were commanded by Xenophon, and the gallant band accomplished their retreat from the field of battle of 3,405 miles in fifteen months."

Mr. Pigott omits Xenophon from his voluminous list of authorities, but the *Anabasis* is not a difficult work to obtain, and he may learn from it for his second edition that the Greeks were not defeated at Cunaxa, but remained masters of the field of battle, from which, therefore, they can hardly be said to have retreated; that they were commanded by five generals, the chief being Clearchus, who were treacherously slain by the Persians some time after the battle; and that Xenophon, though elected to replace one of the five, had previously held no rank in the army, and even after his election laid no claim to supreme command during the retreat from the Tigris to the sea, although he was, if we may believe his own account, the master spirit in the Greek camp. A little further on it is stated that Alexander visited the

tomb of Cyrus at Persepolis. That city was surely founded by Darius after the death of Cyrus, who was certainly buried at his own town of Pasargadae, where his tomb of white marble, exactly as described by the historian of Alexander's visit, still stands, hardly injured by the lapse of twenty-five centuries. Towards the end of the volume, in the chapter headed "Sport," is a curious perpetuation of one of the many blunders that disfigure a very entertaining work, Mounsey's *Journey in the Caucasus and Persia*, a blunder which was pointed out at the time the book appeared by a critic, if we remember rightly, in the *Saturday Review*. Mr. Pigott quotes Mr. Mounsey as authority for the identity of the "derraj" and the black-breasted sand grouse, two very different birds. The former is *Perdix francolinus*, the "kala titar" or black partridge of India, the francolin of Syria and Asia Minor, which haunts shady coverts and reedy swamps. The "bagri kara" of the Turks, the "siya sinah" of the Persians, both meaning "black breast," is *Pterocles arena-rius*, a lover of sandy plains and stony wastes, and as dry and tasteless as the francolin is succulent for the table. Both are found in Persia, and are common in Mesopotamia, where the wide desert and the strip of marsh bordering the rivers affords a congenial habitat to both. O. ST. JOHN.

The Rights and Duties of Neutrals. By William Edward Hall, M.A., Barrister-at-Law. (London: Longmans & Co., 1874.)

NEUTRALITY during war has become in modern times a fact of increased frequency and importance. First, the independence of the American colonies has called into existence a New World, often greatly agitated both in North and in South America, but in the convulsions of which the states of the Old World are seldom called to take part, while those of the New World remain equally strangers to the convulsions of the Old. Secondly, the break-up of the ancient European system of alliances has tended to prevent recent wars from becoming general. Thus two of the Great Powers remained neutral during the war of 1854, and the majority of the Great Powers remained neutral during each of the wars of 1859, 1864, 1866, and 1870. Thirdly, two of the instances referred to illustrate certain modern conditions of existence which tend in the same direction. France and Austria, in 1859, and Prussia, in 1866, availed themselves of their superior state of preparation, and of railways, steamers, and good roads, to commence wars and carry them through before there was time for effective interference, though Prussia in 1859 and France in 1866 were not indisposed to such interference. The second of the circumstances here enumerated may easily be altered by the reconstruction of alliances, and it may well be doubted how far either peace or international morality is promoted by the opportunity which the absence of a solid European system gives to aggression. In the meantime the circumstance exists, and as the first and third circumstances are of a permanent nature, we are justified in speaking of the large dimensions which

neutrality has attained as an international fact.

It may then fairly be said that the ascertainment by general consent of the rights and duties of neutrals is one of the most pressing needs in international law. It is not just or manly that those who avoid bearing part in the responsibilities of war should give unavowed aid to either side. Belligerents, it is true, do not desire impartial critics, but allies. Except where it is quite clear that the sympathies of a neutral, if declared at all, will be declared against them, they do not plead for strict neutrality, but, if they cannot obtain alliance, for what Count Bernstorff, during the Franco-German war, described to Lord Granville as benevolent neutrality. But breach of neutrality is a convenient reason to put forward, in justification of the bitterness which refusal of aid has really caused; and to remove all uncertainty as to the duties of neutrals is therefore not more important in the interest of just and manly conduct, than it is for the avoidance of complaints out of which further wars may arise.

The questions which from the close of the Middle Ages to very recent times were most disputed between neutrals and belligerents were those in which neutral individuals are concerned, but they have now given place in importance to questions affecting neutral states. Of the former class, that of the protection to be afforded by neutral ships to belligerent property on board of them has probably been finally decided by the Declaration of Paris of 1856, though there are still some in England who agitate against such protection. The question of defining contraband of war has of late slumbered, but that of the effectiveness of blockades was dealt with by the same Declaration in terms of extreme vagueness, to which England and France, with the general approval of the world, afterwards lent a practical interpretation in favour of laxity by respecting the blockade of the Confederate coast by the United States, which for a considerable time after its commencement was merely a loose paper blockade. It may be remarked in passing that this instance illustrates one of the main difficulties which oppose the ascertainment and improvement of international law, namely, the small value which every one seems to attach in practice to the maintenance of rules, as compared with the accomplishment of particular ends. As nations are vastly more self-sufficing than natural persons, the gain to be derived from the pursuit of individual ends, and the protection to be derived from the general maintenance of law, are of a very different relative importance in international affairs and in the affairs of citizens of the same state.

But the responsibility for the *Alabama* and her consorts which England could not succeed in escaping, and the demand of Germany during the late war that England should prohibit the export of arms, together with the intention since announced by Prince Bismarck of refusing to adhere to the three rules of the Treaty of Washington unless a declaration of the duty of prohibiting the export of arms should be coupled with them, sufficiently show the consequence which has recently attached to the rules which affect

the conduct of neutral states as such. This country, which, as well as Holland in the days of its maritime greatness, has been a leading supporter of the high belligerent view on the questions affecting individuals, takes the neutral view on the newer class of questions; and if our words should reach any of the so-called foreign affairs committees, which in some English towns keep up an agitation against the Declaration of Paris, so far as concerns enemy's goods in neutral bottoms, while stoutly defending the export of arms in time of war, we would recommend them to consider well how far their position is consistent with itself.

In a non-political journal it would be out of place to discuss any of the questions referred to. The chiefs of a few Bedouin tribes, meeting at rare intervals in the desert, or at one of the cities bordering it, might contrive to live in peace by merely observing towards one another those principles of *neminem laedere, suum cuique tribuere*, which are enforced by courts of law. But when the contact between men is close, the necessity arises for a dispositive justice, the justice of the legislator, which from time to time makes that an injury which was not previously an injury, and that a man's *suum* which was not previously his *suum*. Irish Land Acts are extreme cases, but probably no session of Parliament passes without some legislation of this kind. Now the contact between nations has always been close enough to require dispositive justice: such rules of international law as exist are to a large extent legislation by express or tacit convention; and any discussion as to their improvement or extension is for the most part necessarily of a political kind, to be carried on with a large view to the general good, and not to be confined to deductive reasoning from the legal notions of property or obligation, from the so-called ideas of the equality and independence of states, or from any other simple premises.

Mr. Hall says of the book which we have named at the head of this article:—

"The design of the present work is to ascertain, apart from all prepossessions in favour of English or of Continental views, what the relative authority of conflicting usages in fact is, and to separate distinctly those which have become obligatory from those which are still in course of growth."—(P. 3.)

Attending mainly to history, treaties, and state papers, and placing only in the second line the opinions of authors, and even his own views as to what international rules should be, the author has acted faithfully on the design thus announced, and in two hundred pages has given an amount of information which will be very useful to those who take an interest in these important questions, without having access to the larger compilations on international law: even with some of those larger compilations his book will compare favourably in the number of references to treaties. Mr. Hall has also the merit of being clear and accurate in the use of language. At pp. 63, 64, he contrasts "the issue from neutral waters of a vessel provided with a belligerent commission, or belonging to a belligerent and able to inflict damage on his enemy," which is generally allowed to be a breach of neutrality, with

the case, generally considered to be no such breach, of its neutral possessor selling an armed ship, and

"undertaking to deliver it to the belligerent either in the neutral port or in that of the purchaser, subject to the right of the other belligerent to seize it as contraband if he meets it on the high seas, or within his enemy's waters."

Compare this with the language of the three rules of the Washington Treaty: each contracting power will

"use due diligence to prevent the fitting out, arming, or equipping, within its jurisdiction, of any vessel which it has reasonable ground to believe is intended to cruise or to carry on war against a power with which it is at peace."

What diligence is due? By whom is the vessel to be intended to cruise, &c.? By her owner, by those who have the control over her, or by some government or persons who hope to acquire the property in her, or the control over her? And when the person who intends is ascertained, what is it that the rule describes him as intending to do? To employ the vessel in cruising, &c., or to sell her to some persons or government who will so employ her? In short, was the mere trade in armed ships, so clearly defined by Mr. Hall in the second of the sentences just quoted from him, intended by the contracting Powers to be struck at or not?

JOHN WESTLAKE.

Tiberius Leben, Regierung, Charakter. Von Adolf Stahr. (Berlin: J. Guttentag.)

(Second Notice.)

AUGUSTUS had frankly accepted his position as the earthly providence of the Roman world; he had not attempted or desired to divide his responsibility with any constituted authority; Agrippa and his sons and Tiberius had held whatever power they exercised as members of the reigning "dynasty;"* the only business of the senate was to give more solemnity to his legislative and judicial decisions. His theory was to conciliate the aristocracy as a caste rather than as a corporation; he was glad that his improved administration multiplied employments which attracted them; he was anxious to protect and encourage individuals; his privy council gave the ablest and most energetic a personal position as high as they could have occupied or maintained under the old constitution. Tiberius might, if he pleased, have simply stepped into Augustus's position and continued Augustus's policy, but he thought both the risk and the responsibility of the position too great. He fancied there was a general wish to displace him in favour of Germanicus or some popular senator, or even the senate; he had a theory that it would be better to divide the administration, make one man answerable for the army, another for the civil administration of Italy, a third for that of the provinces. The plan showed some thought, and would have avoided the danger of the old triumvirate; but it had the disadvantage of leaving the sovereignty nowhere. It was shipwrecked by Asinius Gallus, who asked which office Caesar meant to take himself;

and Caesar had to reply that it would not be fair to choose after dividing the things to be chosen. After a tedious and undignified scene Caesar realised, what was not very surprising, that the senate was quite prepared to accept the inevitable; while the senate had discovered that it was impossible to understand the new Caesar or to be at ease with him.

Perhaps this is the place to say something of the "simulatio" of Tiberius which Herr Stahr, rather unfairly to Tacitus, translates by "Heuchelei," or "hypocrisy." Assuming Tiberius to have been a creature with mean impulses and fine aptitudes,* it is intelligible that there should have been a constant discrepancy between his inclinations and his conduct. Now a clever self-conscious man often tries to utilise even the less creditable elements of his character, as a violent temper and the like. It is conceivable that Tiberius might talk of his inclinations or his theories when he pretty well knew that he should have to act upon his circumstances; or, again, adapt his talk to his aptitudes, and leave his conduct to be determined by his impulses. Such a course would not imply conscious insincerity, and yet would produce exactly the same effect as deliberate insincerity upon outsiders, who would be justified in a way in inferring, when the aptitudes broke down altogether, and the impulses determined the conduct, that the man was giving way to his own nature at last. And this view of the "simulatio" of Tiberius would fit in with the profound remark of Dion, that he knew his own character and could not bear to own it, and was angry when detected.

However this may be, it is certain that Tiberius and the nobility started with an incurable misconception of each other, leading on both sides to much exaggerated alarm. This was a serious evil, especially as Tiberius was naturally harsh to individuals who crossed him, though his anxiety and his cautious provision for contingencies naturally exercised themselves for others as well as for himself. There is no contradiction in this. The elder Mirabeau was quite sincere in resenting the wrongs of the human race, though he was very tyrannical in his own unsatisfactory family.

It is true, indeed, that during the greater part of Tiberius's reign his mechanical conscientiousness imposed a certain check upon his harsh temper; at least, in his dealings with the higher ranks. But his system of government did more to aggravate the evil than his conscience to mitigate it. Though he continued to exercise all the powers committed to Augustus, he did not give up the attempt to limit his own responsibility. He wished to be simply the highest officer of the Roman State, with defined duties and prerogatives, bound like other State officers by the acts of Augustus as an organic law; and he wished the senate to stand beside him as something like a co-ordinate authority, relieving him both of work and of power. In the sphere of legis-

* This assumption may perhaps be made easier by another, that his impulses represented the degenerate tendencies of his baffled father, while the aptitudes came from his successful mother, a heathen Madame de Maintenon.

lation and administration the project failed without doing much good or much harm. Tiberius earned a little hollow popularity by submitting to be outvoted: he had to curb the fussy zeal of some good patriots who could not see that sumptuary laws were becoming an anachronism; he grumbled a good deal that the senate could not divine the precise division of labour that suited him, and sometimes proposed a vote of thanks to his soldiers, and sometimes asked him to find a governor for one of their provinces, and the like. At last he drifted into the habit of sending his orders, which the Fathers understood much better, though, if consulted, they would have preferred to be saved the trouble of meeting to endorse them. But in the sphere of high police Tiberius's system did serious mischief. His plan was to throw the odium of severity on the senate, and have the credit of clemency himself; but even when he remembered to mitigate the sentence, or to direct an acquittal, he gained less than he habitually lost by insisting on having everything tried and sifted to the uttermost; e.g., ascertaining by torture that a statue of Augustus had been sold, and then ruling that it was not a crime to sell it; and it is possible that Tiberius's private vices would have been passed over as lightly by historians as those of Trajan, but for his morbid craving to convict the authors of exaggerated passions upon them. If Roman society had been sound and Roman legislation rational, Tiberius would have discredited himself without doing much harm to the State; but Roman society was corrupt and ferocious, and Roman legislation was very severe in theory, because no respectable opinion took it for granted that when a penalty had been incurred it ought of course to be inflicted. The apologists of Tiberius are fond of complaining that Tacitus does not profess that the victims of the prosecutions he deplores were innocent; he only records, quite honestly, the general impression that the prosecutions were spiteful and unnecessary. The laws were not meant to be enforced against any but very presumptuous sinners, as Tiberius himself knew when he pleased; for instance, he appointed a commission of fifteen to determine how many of the prosecutions under the marriage laws, which had become alarmingly numerous, should be allowed to proceed. Perhaps the story of Suetonius that Cocceius Nerva, the great jurist, killed himself because Tiberius had proposed to put in force the Julian legislation about contracts, is even more significant as to the unfitness of Roman law to be applied. And it was not only in the senate that the wooden-headedness of Tiberius allowed inapplicable laws to be applied at random; though we naturally fancy so because Tacitus records the action of the senate and not that of other courts (and here, too, his reticence has served the advocates of Tiberius). We know that it was one of his first acts to inform the praetor, in answer to a question whether he was to take cognisance of charges of *majestas*, that he was to enforce the laws; which amounted to bringing the very sweeping law of treason out of the sphere of prerogative, within which Augustus had employed it in defence

* The word is to be taken rather in its Greek than in its English sense.

of social decency, into that of common law. A modern reader sees that most of the "victims" of Tiberius had something like a fair trial; that it was by no means always Tiberius who set the law in motion; that sometimes he even mitigated the penalty; that lastly, when the prosecution was in his interest, it was generally a case of real disaffection—and then finds it hard to see where Tiberius was to blame. In the first place it is to be observed that a government which has to punish disaffection is always bad, and that Tiberius certainly much overestimated the danger from disaffection: in the next place, though the partisans of Sejanus, Agrippina, Livia, Drusus, and the rest, were not exactly stimulated by Tiberius to carry on a war of prosecutions, yet even here he was responsible in this sense, that such things did not happen under good emperors. The fact is, not only did Tiberius treat laws meant to legalise occasional administrative acts as part of the regular legal routine, but his whole administration tended to keep down what was best in the aristocracy and bring out what was worst. In the first place, he was afraid of superiority and ambition; and here the affectation, which he carried as far as any of the early emperors, of being only a simple citizen, told very mischievously. A king can allow his subjects to distinguish themselves, because his office puts him essentially above them; but this only began with Domitian. It is an anachronism to talk, as Herr Stahr does, of a man being loyal or disloyal to "his Caesar" under Tiberius. And though Tiberius was not a demagogue, and was more inclined to maintain than break down the hierarchy of privilege in the Roman world, he found himself more comfortable in promoting a deserving underling, up to his work and not above it, than in employing a grandee who might not impossibly conspire. Even his care for the provinces, which led him to see that frequent changes of administration did harm, hindered him from seeing that idleness was bad for the nobility; and in the latter years of his reign his indecision went so far that he left provinces without any governors at all, having found already that it answered as well for the province to keep the governor at home, and make him send his lieutenants. As the result of all, a great deal of energy was repressed, and a great deal ran to spite more or less ignoble; and the aristocracy prosecuted each other as fast as they were allowed, and, when prosecuted, killed themselves because they were not in charity with themselves and the world. It is remarkable that public opinion, at least the opinion of the people, held Sejanus answerable for all that happened; and it is probably true that, at any rate after his retirement to Capreae, Tiberius's wish to lessen his own responsibility worked as follows:—Sejanus, or one of his dependants, set a charge in motion. Tiberius did not care what the decision was; he was only anxious the investigation should be thorough. Meanwhile a party in the senate, more imperialist than the emperor, always reinforced any party that prosecuted, unless the emperor declared for an acquittal. Sejanus seems to have owed his position to his being a man who could transact business rapidly

and pleasantly, while Tiberius was harsh and dilatory; so that it was a relief to his temper and conscience to refer suitors to the praetorian prefect, who multiplied in this way the influence he had gained by the concentration of the praetorian guard. The extent of the proscription which followed his execution has been attributed to the extent and formidable character of the conspiracy he is supposed to have organised. There is no proof whatever that Sejanus intended anything against Tiberius, except perhaps—and this is guessing—in the way of self-defence. He had really made a party to secure the succession at the expense of the children of Germanicus, which Tiberius thought a proof of madness, and determined thereupon to make away with him. His party while in power had made enemies; and these enemies availed themselves of the name and the fears of the emperor, and of the ill-use their rivals had made of prosperity, to exact wholesale vengeance; while Tiberius still showed a surviving ineffectual sense of equity by an edict permitting the relatives of the deceased to wear mourning. The divorced wife of Sejanus (who had as much reason to be jealous as Livia, and less tact in tolerating the politic infidelity of her husband) stated, before killing herself, that her husband had poisoned Tiberius's son eight years before by the agency of two Greeks, who were tortured, with many others. The charge did not break down, and torture in that age sometimes failed to establish charges; but it is surprising that one historian after another has repeated it as certain, especially as Tiberius in his memoirs seems to have rested the execution of Sejanus exclusively on his schemes to oust the children of Agrippina. Whether he believed or no that his favourite had murdered his son, Tiberius had every reason to be miserable, and his misery made him grimmer than ever. His suspicious indecision became a positive disease; he was always ordering arrests and prosecutions with utter recklessness of human suffering. All the while he retained a perverted pedantic regard for justice; he seldom condemned till convinced, rightly or wrongly, that the condemnation was deserved; and, when a prisoner begged to be put out of pain at once, grimly replied he had not made friends with him yet, implying he had no right to ask a favour. Another consequence of this misery was that Tiberius plunged into systematic sensual excesses, of which he made freeborn girls and boys the victims, so that we have the same evidence in kind against him that we have against Louis XV. This was the consummation of the breakdown of his nature, which, like Swift, he had feared before it came. He had assigned the possibility of his ceasing to be of sound mind as a reason why the senate should not swear to his acts. His contemporaries thought that he foresaw his degeneracy in his horoscope. Herr Stahr imagines he was too sensible for such a superstition as astrology, and only kept Thrasylus near him because he was a great scientific teacher. This, like the rejection of the sensual excesses, is arbitrary and *a priori*, and, besides, has not the merit of probability. Astrology has always been rather a chimerical science than a superstition

—a fantastic way, adapted to imperfect knowledge, of putting the view that human conduct and human fortune is irrevocably fixed by natural causes; that cosmic forces determine the character which is our fate. It is very natural that a slow, sceptical mind should be drawn to this form of fatalism and be the worse for it.

Herr Stahr has been more successful in apologising for the relations of Tiberius to the other members of the Imperial family. Till the order of succession is fixed, it is impossible to try the conduct of members of despotic dynasties towards one another by a standard high enough to condemn the execution of Agrippa Posthumus, ordered in Tiberius's name, probably without his knowledge, but still covered by his responsibility. Herr Stahr's patriotism leads him to under-rate the military superiority of Germanicus to Arminius. Velleius admired the achievements of the young hero, and it was probably a misfortune for Rome that Tiberius allowed himself, not without some pettiness, to adjourn the question whether it was desirable and possible to conquer the line of the Elbe, and to decide upon the narrow issue whether the results of three campaigns were worth their cost. Otherwise Tiberius seems to have tried to do his duty to his nephew, to have liked and even trusted him, though he was half afraid of him, and possibly showed a discreditable suspicion in the secret instructions given to Piso, whose wife seems really to have tried to bewitch Germanicus, though Piso was innocent of poisoning him. Still Tiberius was not sorry that Germanicus died. He was not insensible to affection, but his affections gave him more pain than pleasure; he could hardly regret their coming to an end, and he was too proud or too honest to observe the ceremonies of grief in deference to others. When Germanicus died, he published a fine edict about self-control. When he lost his mother, who had tyrannised over him, he cynically observed, he was too busy to put himself out of the way to be unhappy. In both cases the public were scandalised; they were angry, too, at the severity with which Agrippina and her sons were treated; and the severity was certainly indecorous, though Agrippina was provoking, and her friends disloyal and perhaps dangerous; and it was really inexcusable, even though the younger Drusus was crazy, to let him gnaw his mattress and die for want of food.

It is probable, however, that even this might have been condoned, if Tiberius's administration had favoured the healthy development of Roman life, and been adapted to the best Roman opinion. This is the real explanation of the evil reputation of one whom Herr Stahr has shown more fully than any of his predecessors to have been a great and well-intentioned ruler.

G. A. SIMCOX.

CHINESE MEDICINE.

Twelfth Annual Report of the Peking Hospital for 1873 in connection with the London Missionary Society. By John Dudgeon, M.D. (Shanghai, 1874.)

The study of medicine has in China always been regarded as of the highest importance.

Doctoring is a very favourite occupation of the literati of that country. A man needs no certificate to practise. He depends for reputation on the cures he performs, and his introduction to the profession is accomplished by his learning its duties from some physician who communicates to him his experience.

The two fundamental medical books are very old, and belong to the Confucian epoch or that of the Early Han. The doctrines of alchemy, which budded and blossomed in the Later Han age, or about A.D. 200, do not appear in these works. The combination of Taoist doctrine with the healing art by the alchemists of the Han dynasty and the time following it, marks a new period in the history of Chinese medicine. Before this time the forest hermit, gathering herbs in the mountains, became by successful cures a noted physician. Here was the first connexion between the Taoist religion and the history of Chinese healing. The notion of a vegetable elixir, that is, of the herb of immortality, dates from the time of the simple followers of *Lautsze*, or of the hermits who preceded him and whom he admired. The seekers of the elixir were in high favour with *T'sin she hwang*, the book burner. Among the books exempted from destruction those treating on medicine were included. *Soo wen* and *Ling k'ew*, the two works above referred to, may have very well escaped from the memorable burning which raged most fiercely against the writings of Confucius and other political and moral writers.

The conquest of Cochin-China and of Central Asia by the early Han emperors led to the introduction of much outside knowledge into China, and acted powerfully to extend enquiry among the scholars of that country. But the new impulse imparted by the sight of new objects in nature and art did not herald any great improvement in real science. Astronomy became a more thoroughly elaborated astrology, and medicine became a pronounced alchemy, of which one feature was the distinct effort to discover the secret which would enable the happy alchemist to transmute common metals and other things into gold, and to guarantee immunity from death to every one who partook of the efficacious compound which issued from his laboratory.

The invention of alchemy was productive of more injury than benefit to medicine, and has not in China been succeeded as in Europe by a scientific age of enlightened enquiry. Alchemy of course fell into disuse because it failed. Two emperors are said to have died after partaking of the philosopher's stone. Repeated want of success tired out the operators and rendered popular faith in it impossible. Yet the names and hypotheses remained to cumber medical literature and obscure the intelligence of the physician.

At least a thousand years before the Christian era a doctrine of five elements existed among the wise men of China. It is found in the Book of History which dates from that time. This doctrine has beclouded the minds of the physicians of that country down to the present day. The five elements are in their view the five activities which operate on each other in the form of metals,

wood, water, fire, earth. Under the influence of this theory the ancient chemists while preparing medicines accounted in a ready-to-hand way for the phenomena they witnessed. Metals melting under the action of fire showed that the element fire conquers the element metal. But water extinguishes fire. The element water, therefore, which manifestly is the victor over fire, may be applied by those who know how to subdue all evils attendant on fire. In this way they arranged a circle of interacting influences, and thought that in so doing they had arrived at the inner secrets of nature. The human body they represented as under the dominion of the five elements, and the efficacy of all drugs is nothing but an exemplification in each case of the elemental action. Fever, for instance, is the domination of the element of fire, and must be expelled by a judicious application of the element of water.

From the elemental theory and from alchemy springs the whole nomenclature of medicine, the idea of the microcosm being added, according to which everything in heaven and earth finds its analogue in the human body.

From this way of looking at things Chinese medicine has never yet set itself free. The foreign physician resident in China finds, therefore, the native mind in regard to medicine besotted with prejudice and error.

When three centuries ago the Jesuit missionaries began to reside in Peking they taught the science of Europe as it then was to the wondering courtiers of the time. They could not make known the Copernican system. It was not accepted by the Church. Whether it was believed by the missionaries who translated Euclid into Chinese, and taught the natural philosophy then current in the Catholic seminaries of Spain and Italy, we do not know. However this may be, extant books show that they taught the system of Ptolemy in astronomy and of the four elements in philosophy. Perhaps this may account partially for the slowness with which the Chinese have during these three centuries received our ideas. Was the science taught by the early Jesuits much better than that which existed in China at the time? They were asked to abandon a belief in five elements and accept one in four. The Chinese were certainly behind-hand in their notions of geography; but, while it was an ecclesiastical offence for the Jesuit to teach the motion of the earth round the sun, there was no great advantage to be gained by the Chinese in exchanging his science for that of the western stranger. It was not till the eighteenth century that the doctrines of Copernicus and Kepler were taught to the Chinese by the Jesuits. They never seem to have made known to them the doctrine of the circulation of the blood and the modern history of European medicine.

It was in the old days of the East India Company that vaccination was introduced at Canton by Sir George Staunton and Mr. Pierson, an English surgeon. Since then about sixty-five years have elapsed, and the practice of vaccination is slowly working its way in the country. In the neighbourhood of Peking it is gradually supplanting inoculation. But it is left to private enter-

prise. Often the vaccine lymph has failed and new supplies have been obtained from Dr. Dudgeon by the native operators. In the absence of tubes it used to be the custom for the native vaccinators to take the children of the poor with them in a cart to the houses of the rich, who preferred to have their infants vaccinated at home from the shoulders of poor children, rather than have them taken to the public vaccinating institution. The native institutions in Peking, four or five in number, which existed there previous to the arrival of European physicians were founded by benevolent men returning from Canton, where they had held office for some years. Sir G. Staunton's tract was reprinted, but the name of England and of the discoverer of vaccination were omitted, probably at the time of the last war. The metropolitan vaccinators are appointed by a committee of gentry, and a small fee is charged for each child.

In the country private vaccinators go where they please, and in some districts they charge very high fees for the privilege of vaccination. No law or usage interferes with them, and if they demand twice as much for operating on a boy as on a girl public opinion is in no way outraged. It is the habit of the people to value boys more than girls, and the vaccinator takes advantage of this.

Dr. Dudgeon's Report shows that prejudice against foreign ways and opinions is gradually breaking down. After twelve years the hospital of the London Missionary Society in the capital of China continues to be a centre of good. During last year there have been 18,300 patients. The physician has added to his exertions in the hospital a lectureship in Anatomy and Physiology in the Government College. This has brought him into close contact professionally with the highest officials, several of whom he has attended in sickness.

The late Dr. Hobson, who during his long residence in China as a medical missionary translated several medical and scientific treatises, achieved by so doing a great fame among the Chinese. These books appear from this Report to be still in demand among Peking readers. Forty-eight copies are mentioned as being sold at the book-shop established in connexion with the hospital. A work on Geography and a large Map of the World are also greatly in demand. The increased sale of monthly and weekly journals issued by foreigners for the purpose of spreading useful knowledge in China is very gratifying. Political news, religious news, information on machinery, science, the benevolent institutions of Europe, accounts of travels, and all remarkable events, are thus communicated to thousands of readers whose knowledge of the world did not formerly extend beyond the *Peking Gazette*.

The Mongols look upon Peking as the eye of the world. Every winter they take refuge there in crowds from the chilling winds of their less happily situated country. They regard Peking as under the special favour of heaven, and perform their prostrations before the emperor with the most sincere reverence, from a confirmed belief that the liberty to do so is the greatest of privileges. It appears from this Report

that Mongols of all classes now come to the hospital to be cured in great numbers. Some remarkable cases are mentioned. Thus the fame of the hospital will become yet more widely spread in the "land of grass." All over Mongolia the physicians are Lamas educated in the Buddhist colleges and monasteries, where there is a medical course. The healing art taught is that of Tibet and so ultimately of India. Now the news will be conveyed to those extensive monastic establishments in Tartary which the lively pen of Abbé Huc has made known to so large a number of readers, that the English physician in Peking has performed marvellous cures on Mongol princesses, Lamas and others. They will probably represent in their reflections upon these things that the virtue and excellence of the Chinese monarch are so great that the English with their hospital and physician have been irresistibly attracted to live in the vicinity of his palace.

JOSEPH EDKINS.

Reminiscences of a Soldier. By Colonel W. K. Stuart, C.B., late 86th Regiment. (London: Hurst & Blackett, 1874.)

THE great merit of this book lies in what may be called its powers of typification and illustration in respect of English military life. In it we have a type of the British officer and soldier, the correctness of which few observers can fail to certify and acknowledge; and a succession of *quasi* professional scenes and stories characteristic of a period antedating at least half a century ago. The process by which the present altered status has been reached is easily traceable by those who care to undertake the investigation. But while we thank the author for many valuable as well as interesting and amusing data, we are not prepared to accept unreservedly his views and deductions. He seems to show too much of the side of the picture he commends, and too little of the side he condemns, to secure, on behalf of the former, an unprejudiced and impartial judgment. In his support of a particular school and system, much as our sympathies may be with his theories, we cannot ignore the absence of counter arguments of possibly great value. Nothing, for instance, can be sounder and truer than his sentiments regarding the treatment of the common soldier (Preface, page ix., and vol. ii. page 299), sentiments which are as politic as they are generous and kindly; but it is easier to inculcate the principle than to generalise the practice laid down. In forming the model officer contemplated, very much depends on the individual, his tastes, predilections, education, and the motives which have led him to adopt the profession of arms. What to Colonel Stuart has appeared easy and natural may have been incomprehensible to, and unattainable by some, perhaps many, of his fellows; and so would it also be in the case of his successors. There are many men whom a sensitive and retiring nature, or a sober and contemplative turn of mind, more or less disqualifies for that broad, open popularity which their brethren in the army have easily won and maintained; who possess, at the same time, qualities of endurance, abnegation of self, and a true chivalry which be-

long essentially to the soldier, and are, in fact, his choicest ornaments. Such men the service cannot afford to lose, and it is not too much to assert that such men, by influence and example, do the service incalculable good. On the other hand, how many officers are there whose social success and personal popularity are matters of course, to whom, however unequivocal their courage and honour, privation and endurance are, at least, difficult, and the monotonous routine of garrison and regimental duty is blank and irksome.

Happily the sneer at religion is no longer expressed in the vulgar and offensive form of days gone by; nor is the oath a part of education, or drunkenness a phase of training for rising generations of gentlemen. Dissipation and idleness have ceased to be conventional: no sensible study, professional or otherwise, is tabooed; and practical jokes have become restricted to almost reasonable limits. These and like social changes and reforms have affected especially the army; and, aided by the fusing and levelling spirit of competition, the result upon the service has been the loss of that exclusive and distinct character which it once possessed in the estimation of the masses; and a main feature of which was a sort of warranted exceptional "fastness." Whether improvement in one respect is detriment in another; or whether the general improvement has been greater than the general deterioration, must be a matter of opinion. To us there appears to be more cause for congratulation than lamentation; but a great deal remains to be done to arrive at that high standard of military efficiency in *morale* and *matériel* which it should be the privilege of this country to command; and there is no chapter in the whole of Colonel Stuart's book worthy of more attention on the part of our army legislators and reformers than the last, where he takes exception to the false position of the officer, the hard condition of the soldier, and the physical degeneration of the recruit.

As a specimen of the book, many quaint anecdotes might with propriety be extracted, because the whole style is essentially light and desultory. And though all may not be new to every reader, more especially the frequenter of messes and military clubs, old soldiers will be the first to welcome the better part in a collective shape. The story of the matter-of-fact subaltern (pages 32, 33) is an example of very genuine humour. If we now prefer selecting from the more serious pages, it is because the reality of the author's description strikes us as remarkable, when recalling the suffering experienced on the occasion of the outbreak of cholera in June, 1846, at Karachi. His account, however brief, is forcibly and graphically given:—

"The regiment paraded at four o'clock for the funeral. It was a beautiful afternoon, with a clear blue sky, and not a cloud in the heavens. We had to march about six or seven hundred yards to the churchyard; and before we reached it, upwards of thirty men had fallen out with cholera, and of the men who composed the firing party, five were dead that night. The body had scarcely been placed in the ground when, almost with the rapidity of a change of scene in a theatre, the hitherto glorious atmosphere was at once over-

spread with a black lurid cloud. A frightful sand-storm followed; you could not see two yards before you, and the density of the air was such that it was painful to breathe. The soldiers were dismissed on the spot, and ordered to find their way themselves to the tents. . . . By twelve o'clock that night we had over one hundred men dead in hospital, and so violent was this first outbreak of the disease, that every man who was attacked on Sunday died."

Under orders from Sir Charles Napier, the 86th were removed out to Clifton, the name given to a high locality immediately overlooking the sea, marked by a few officers' bungalows; the comparatively fresh air of which renders it, on occasions of ordinary sickness, a desirable sanatorium. It was only a march of three or four miles from cantonment. Their arrival is thus recorded:—

"The scene baffled description. Cries of agony resounded on every side, and you hardly met a soldier that was not more or less under the influence of the disease. On many of those seriously attacked, I noticed a large black spot across the face, as if the Angel of Death had marked him for his own, and I cannot remember one of those so marked that recovered. Some poor fellows were absolutely as black as negroes."

Within ten days, the following is the result reported:—

"The 86th buried three hundred and eighty-five men, women, and children. The finest and most powerful men were swept away; seventy-seven grenadiers and light company men, the pick of the corps, were among the victims. . . . In fact, the regiment was all but destroyed."

Colonel Stuart dwells much on the pastimes of soldiers, and rightly considers that an officer should not be indifferent to the wholesome character of these or to the necessity of providing time for their exercise. He joins his men heartily in their outdoor sports; trains them for running matches, if necessary; but is not unwilling to trust them, for recreation at certain seasons, out of his sight and ken, and advocates strongly the system of "passes." There is one class of soldiers, and no small one, to whom natural bias, or it may be previous association, places the theatre far above all other diversions in interest and importance. And so long as it does not interfere with duty, or induce to drink or dissipation, amateur acting, even in the shape of melodrama and farce, is certainly as harmless, if not as healthy, as gymnastics or bowls, and more intellectual than either. Officers have much the same general fondness as the men for the stage, although their respective tastes may not always correspond as to the particular style of entertainment chosen.

The Poona theatricals will not yet have been forgotten by many who were at that busy Indian station twenty-three years ago; and to those among them who take interest in the stage heroes of the hour, and note the salient points of amateur histrionic efforts, the Claude Melnotte and Glavis of the *Lady of Lyons* and the Cox and Box of the succeeding farce, will not be the least agreeable reminiscences. We may mention that the author of the volumes under review played the first-mentioned character in each piece. In his book he reprints the play-bill of July 14, 1852; and as repetition may be accepted in proof of success, we have plea-

sure in bearing witness that a similar performance, with the principal characters filled by the same actors, had had effect on the same stage, on the 17th of the same month in the previous year. The soldier who then played *Mdme. Deschapelles* deserved, in our opinion, great credit for his performance, despite the disadvantages of strange attire and deportment and a slight tendency to exaggerate. Pauline was, on the other hand, not subject to the hard ordeal of representation by one of the ruder sex; and the result, in this respect, was certainly a gain.

A great deal more might be said on these lively volumes—not only on the actual matter of the text, but on ideas which freely arise in the course of perusal. F. J. GOLDSMID.

NOTES AND NEWS.

"CASTLE DALY," which is now appearing in *Macmillan's Magazine*, is by Miss Keary, the author of *Little Sealskin* and other Poems.

MR. F. O. ADAMS, Secretary to the British Embassy at Berlin, has just completed the second volume of his *History of Japan from the Earliest Period to the Present Time*. It is to appear in October, and carries on the history of Japan from 1865 to 1871.

THE new buildings of Owen's College, which are set apart for medical studies, will be opened by Professor Huxley on Friday, October 2, at 3 P.M.

MR. S. BARING-GOULD has in the press a work entitled *Yorkshire Oddities and Strange Events*. The materials were accumulated by the author during a residence of many years in Yorkshire, and as "every other Yorkshireman is a character," the book cannot fail to be full of interest. Mr. John Hodges is the publisher.

WE understand that *The History of Protestantism*, which Messrs. Cassell, Petter and Galpin are about to publish, is from the pen of the Rev. Dr. Wylie. The work will be issued in serial form and will be commenced in October next.

THE *Arcadian* states that Messrs. Lippincott will shortly issue the long-looked-for *Life of Benjamin Franklin*, by the Hon. John Bigelow; and that Messrs. Putnam have in preparation a book by Professor J. M. Hart, on German Universities, comparing the German system with that of England and the United States.

MR. JOSEPH FOSTER's publication for 1875 is to be the *Pedigrees of the Historical Families of Lincolnshire*, as compiled by the late Lord Monson and Arthur Staunton Larken, Esq., B.A. In 1876 he proposes to issue the *Pedigrees of the Historical Families of Sussex*, compiled by the late Sir William Burrell, Bart.; and in 1877, the *Historical Families of Suffolk*, compiled by D. E. Davy, Esq., of Ufford. The last will be of special interest, as no Suffolk collection has hitherto been published. These are to form part of a *magnum opus*, to be entitled *The Pedigrees of the County Families of England*, two volumes of which will appear every year, uniform in size and style, in folio, with Berry's *County Genealogies*. This series will contain the pedigree of every county family with living representatives, that has hitherto been published, compiled from the *Heralds' Visitations*, *County Histories*, *Parish Registers*, *Wills*, and other trustworthy sources; and as the head of every family will have an opportunity of revising his pedigree, it will doubtless excel all its competitors in accuracy, and being more comprehensive than other works of the same class, will be of correspondingly greater value. An engraving of the arms and crest of each family, heraldically drawn, will accompany each pedigree. This series will also contain the pedigrees of all those families which were entered

by the *Heralds* at their Visitations, and of which there are copies in the public libraries; they will also be worked up to some extent upon the same basis as the pedigrees of the existing families, so that if this plan be eventually carried out, we shall possess as perfect a series of English genealogies as can be compiled. Mr. Foster's plan is deserving of the support of historians, no less than of genealogists and antiquarians.

A MANUSCRIPT poem in the Bodleian, written by one Forrest, addressed to Queen Mary, and being a history of Queen Katherine, is to be printed at once by one of the members of the Roxburghe Club as his present to the Club.

THE late Bishop Sumner's literary reputation will rest chiefly on his edition of Milton's treatise *De Doctrina Christiana*, the original manuscript of which was not brought to light until 1823. In that year Mr. Robert Lemon, deputy keeper of the State papers, found it in what was called the Middle Treasury Gallery, Whitehall, loosely wrapped in two or three sheets of printed paper, with a large number of original letters, informations, examinations, and other curious records relative to the Popish plots in 1677 and 1678, and to the Rye House plot in 1683. The same parcel likewise contained a complete and corrected copy of all the Latin letters to foreign princes and States, written by Milton while he officiated as Latin secretary; and the whole was enclosed in a cover addressed to "Mr. Skinner, Merchant." Cyriack Skinner, to whom the twenty-first sonnet is addressed, was, we all know, Milton's favourite pupil and afterwards his particular friend; and it seems probable that the very decided Republican principles which Skinner had adopted made him an object of suspicion to the Government during the above-mentioned periods of disquiet, and led to the seizure of all his papers, including the precious manuscript entrusted to him by the poet. At the time of Mr. Lemon's discovery, Sumner was Librarian and Historiographer to the King, and by his Majesty's command undertook an edition of the original text, and a translation of it in English, in two quarto volumes. Another interesting point in connexion with this work is that it suggested to Macaulay the subject of his first acknowledged contribution to the *Edinburgh Review*, his essay on John Milton being headed with the title of Sumner's Translation.

WE understand that the first volume of the *Observations* made at the Observatory of H.H. the Rajah of Travancore, under the direction of Mr. Brown, F.R.S., is now through the press. This volume contains eighteen years' observations of magnetic declination made at Trevandrum, and four years' observations of the same magnetic element made at the Agustia Malley Observatory (6,000 feet above the sea). Reports on the work of the Director from 1852 to 1865 form an appendix to the volume, which will be published by Messrs. H. S. King & Co.

M. ALBERT DUMONT, Sub-Director of the French School of Athens, has just addressed a Report to the Ministers of Public Instruction, on the results of the mission of L'Abbé Duchesne and M. Ch. Bayet. These gentlemen left Rome in the beginning of February, passed through Epirus, visited part of Thessaly, and made a long stay at Mount Athos and Salonica. M. Duchesne also inspected the library at Patmos. The results may be summarised as follows: 1. 160 inscriptions have been copied, about 140 of which are unpublished, from Salonica, Macedonia, Larissa, Trikala, Kalabaka, &c. 2. M. Bayet has made a minute study of the mosaics of Salonica, which have no rivals in the East, except those of Saint Sophia at Constantinople, and has formed a collection of all the dated inscriptions which allow us to follow the history of art on Mount Athos—an indispensable basis for researches on Byzantine art. The two explorers photographed, at Salonica, a marble of the fifth century, bearing the Virgin, the Good Shepherd, the Magi, and a

winged angel. Sculptures of the first centuries of Christianity are very rare in the East, only five or six being known which represent religious subjects. This marble throws light on the history of Byzantine art, and the relations of symbolism in the East and the West in the fifth century. S. M. Duchesne has made the following palaeographical discoveries: nine pages of metrological fragments of Julius Africanus; twenty-two pages of inedited scholia on the *Iliad*; nine leaves of the Caesarea MS. of St. Paul's Epistles; thirty-three leaves of a sixth century MS. of St. Mark's Gospel; unpublished scholia on Demosthenes, Aeschines, and Thucydides; Latin documents bearing on the relations of the Greek convents with the West, especially with the Court of Rome; a fragment of a Greek lexicon; the charter of the monastery of Barlaam. He has also drawn up a description of the principal MSS. in the Library of Patmos, and copied the classical portion of an Anthology preserved at the same place. Some further details of these important discoveries will be found in the *Journal Officiel* of the 18th instant.

DR. JULIUS ZUPITZA, of Vienna, has been for some time in England, collating and copying the MSS. of the various old romances of *Guy of Warwick*, with the view of publishing them in Germany. The Early English Text Society always meant to print these MSS. too; and two years ago Dr. James A. H. Murray collated for this purpose the printed text of the oldest MS. of *Guy*, the Auchinleck (or Affleck) with its original. But now Dr. Murray will waive his intention to edit this and the other MSS. in favour of Dr. Zupitza, so that the latter may, as it is hoped he will, edit the whole set of *Guy* romances for the extra series of the Early English Text Society. Dr. Murray's parallel-text edition of all the MSS. of *Thomas of Ercelesdown*, is now in type for the original series of the Early English Text Society.

WE are glad to hear of a Shakspeare club among the Professors of the College of New Jersey, Princetown, U.S.A. Professor Hart, of this club, whose late excellent paper in *Scribner* on Shakspeare's death-mask and portrait has attracted such favourable attention, is a leading member. The subject for the fortnightly meetings last session was, as it will be for next session, Shakspeare's acquaintance with the English Bible. The members read together both the minor poems and plays, and record every passage in which there is a quotation of Scripture language, and also every one in which either the thought or the language betrays familiarity with the Bible. When all Shakspeare's works have been exhausted, the members of the club will sum up their results and publish them. The former English books on the subject are not thought thorough enough.

With reference to the subject of Professor Hart's article in *Scribner* we may mention, on the authority of Mr. Butcher, the very courteous clerk of Stratford Church, who saw the examination made, that two years ago Mr. Story, the great American sculptor, when at Stratford, made a very careful examination of Shakspeare's bust from a raised scaffolding, and came to the conclusion that the face of the bust was modelled from a death-mask. The lower part of the face was very death-like; the upper lip was elongated and drawn up from the lower one by the shrinking of the nostrils, the first part of the face to "go" after death; the eyebrows were neither of the same length, nor on the same level; the depth from the eye to the ear was extraordinary; the cheeks were of different shapes, the left one being the more prominent at top. On the whole Mr. Story felt certain of the bust being made from a death-mask.

THE *Allgemeine Zeitung* states that the present director of the national library of Rio has made the interesting discovery that in the collection, known as that of the Abbot Diego Barbosa Machado, there are thirty-seven unique woodcuts by

Albert Dürer, bearing the date of 1511, and entitled "Figuræ Passionis Domini Nostri Jesu Christi." Besides these valuable relics of the old German master, the Machado collection is found to possess his celebrated "Adam and Eve" of the earlier date of 1504; and considering that this section of the Rio library includes a large number of books, prints and MSS. from the old Ajuda library, which were originally brought to Brazil by John VI. of Portugal, it is highly probable that a further search may be rewarded by the discovery of other artistic and literary treasures.

THE Roman papers announce the sudden death at Civitá Vecchia of Father Augustine Theiner, the learned theologian and writer on Roman Catholic Church History. Father A. Theiner, who was born in 1804, at Breslau, where he studied theology and jurisprudence, showed in early life a tendency towards the heterodox views of his brother, J. A. Theiner, and wrote, in conjunction with him, a treatise "On the Compulsory Celibacy of the Clergy and its Results." In 1833, after having made a scientific voyage at the cost of the Prussian Government, and visited Northern and Central Europe, he proceeded to Rome, where, in consequence of a change in his opinions, he was led to enter the Jesuit College of St. Eusebius, and thenceforth he continued to be a zealous member of the Society of Jesus. Theiner's scientific attainments were very considerable, and after his nomination to the office of Prefect of the Archives of the Vatican, he continued to prosecute his researches with great industry, while he availed himself of the historical sources opened to him to produce numerous works bearing upon the history and development of the Papacy. Among the most noteworthy of these are his *Clementis XIII. epistolæ et brevia*; his historical-critical Letters on Rosmini Serbati's *Cinque Piaghe della Sta Chiesa*; and his editorial annotations on the works of Baronius, of which he brought out about half of the sixty quarto volumes in which they had originally been collected. The great task of his life was, however, the completion of the *Annales Ecclesiastici*, begun by Baronius, and the annotation and edition of a large number of original documents and other papers relating to the church history of different Christian nations, which were printed under his special supervision in a printing press within the Vatican. During the latter years of his life it was understood that although he continued to reside at the Vatican, Father Theiner had ceased to be connected with the Archives, in consequence of his having made public, without authority, certain official documents relating to the questions to be discussed at the Council of the Vatican on the Doctrines of Papal Infallibility and of the Immaculate Conception. It is now, however, stated that these revelations were actually made by Father Theiner's brother. At the time of his death, Theiner was on the eve of undertaking a journey to Trieste and Austria, on his return from which he had intended to retire into private life, and devote himself still more uninterruptedly to his literary labours.

THE Bibliothèque Nationale is gradually letting a few shafts down into its unexplored mine of wealth. Hitherto the student has generally been compelled to sound and probe at hazard, unless he happened to be on friendly terms with one of the presiding officials. It is known that the Catalogue of the Bibliothèque—which for the last twenty years has been advancing at about the same rate as the Dictionary of the Academy—is composed of many minor catalogues, embracing special subjects. The last report of the Library Administration informs us that in the Print Department the Supplement to the Catalogue of French History has made good progress; it had stopped short at 1798; now it has reached 1830. The third and last volume of the Catalogue of Medical Sciences is in the hands of the printer. In addition to this work of impression, the manuscript inventories are being formed into

volumes. In theology, including canon law, there are already thirty-nine folio volumes, and in English history thirteen volumes. In a few months the reader will have at command printed catalogues of 441,836 works relating to the history of France; of 68,483 volumes on medical science; and manuscript enumerations of 199,499 works on theology; 19,243 on English history; and 28,447 on the histories of Spain, Portugal, Asia, Africa, America, and Australia. The catalogue of Syriac and Sabeian manuscripts—a supplement to the catalogue of Hebrew and Samaritan manuscripts—has just been published. The 19,800 Latin manuscripts have been classed, and will be catalogued as follows: sacred history, one volume; liturgy, one; the Fathers of the Church, and divers theological works, two; law, one; general history, one; history of France, two; science, one; and literature, one. The report terminates with the announcement that the printed collection of the Bibliothèque amounts to 2,077,571 volumes.

At a recent meeting of the Academy of Inscriptions, M. Mariette read a paper on a discovery recently made at Karnak. The excavations under his charge have brought to light a kind of triumphal arch, dating from the seventeenth century B.C., and built in honour of Thoutmes III., one of the greatest conquerors among the Kings of Egypt. The King is represented four times, of colossal dimensions, holding a captive with his left hand and a scimitar in his right, while a god is bringing him several hundred persons in chains, who represent the towns and people vanquished by him. The names of the districts conquered by Thoutmes are inscribed on this monument, comprising two distinct lists, one for the south and one for the north; in the former are 269 names, in the latter 359. The first list includes four parts: Cousch (Abyssinia), 47 names; Pount, (40 names), formerly placed by Brugsch and others in Yemen, but which is now proved to be the part of the African continent from the Straits of Bab-el-Mandeb to Cape Guardafui; Southern Libya, 29 names; Nubia (i.e. parts of Upper Nubia and Soudan not explored in our days), 153 names. The second list is divided into two parts; the first relates to Canaan, and comprises 119 names, divided into 7 groups, of which the first forms the title, and the 6 others comprise each a certain number of towns; 75 of the towns named have been identified with known places. So we have the geography of Canaan 250 years before the Exodus, and M. Mariette has drawn up a map of the country according to the new document. The general result of this discovery is to place at our disposal more than 600 geographical names of the time of Thoutmes III.; these names bring us on the South from Abyssinia to the country of the Avalites, Southern Libya, and the district of the Upper Nile; on the North to Canaan, and thence to Asiatic countries which the present state of our knowledge does not allow us to identify.

NOTES OF TRAVEL.

THE *Journal de Genève* states that the ascent of Mont Blanc has just been effected by Charles Rand, a native of Chicago, only fifteen years of age—probably the youngest tourist who has ever reached the summit. The *Journal* adds that the youth is a member of a temperance society, and took nothing but water and melted snow.

THE members of the Geological Society of France are about to make an excursion to the environs of Mons to study the tertiary and calcareous formations of Hainault. The first meeting will be held at Mons on August 30, and any person desirous of participating in the excursions and in the fêtes that will be given on the occasion, will, on sending fifteen francs to the secretary at Mons, receive a card of admission.

A LETTER printed in the *Opinion Nacional* of July 11, gives a description of Quito, where many Indians live, as well as in the neighbouring villages, who still speak their own Quichua tongue.

It gives a few words as examples:—"Chasquinada munan quichu (wilt thou have) Doña Rosada, caibi presente tiajum (Doña Rosa who is here present), cambay legitima guarmi gachum?" (for thy lawful wife)? "Auehuri caimauto" (go from here); "Aichada micui" (like flesh); "Yacuda apamuy" (take water); "Pinguda pascay" (open the gate); "Amá fiña cuicui" (don't hurt me); "Ñia chue confesar gangi? Mono, Cristo de la tierra" (hast thou confessed. No Christ of earth—so they call the priests). This last phrase will show the power which the *padres* possess. The Indians confess in Quichua; though for the most part they speak also Spanish, especially the younger men. From the few sentences which are given, it is evident that this dialect is very much adulterated.

THERE has been a fresh outburst of blind popular resentment against the Jews at Magnesia, owing to the ignorant belief of the Christians that the Jews kidnap Christian children, for the purpose of using their blood in the preparation of passover cakes. The death of a Turkish child under peculiar circumstances was used as a means of inflaming both Greeks and Turks against the Jews, but fortunately the Turkish authorities acted with vigour and firmness, and prevented the bloodshed that was imminent.

FROM Bengazi, under date July 4, we learn that a plague or pestilence of a very alarming nature has broken out in Barbary. Its chief stronghold is the village of Marsh, about twenty hours from Bengazi. It arises from the pernicious habit the Arabs have of digging their wells close to their cemeteries, the graves of which are so lightly covered with earth that the heavy rains wash off their coverings, and convey the impure matter beneath to the wells. Added to this there has been great misery this winter in Marsh among the Arab tribes; the animals died in numbers, and were left unburied, poisoning the air around. The first appearance of the plague was in the month of March, when it broke out amongst the tribe Lit Istanik. It continued to spread, and on June 8 it was declared to be the veritable plague by Dr. Laval, who was one of a medical commission sent from Bengazi to enquire into the nature of the epidemic. He has since himself fallen a victim to its attacks.

A CORRESPONDENT of *La Turquie*, writing from Jerusalem, mentions the researches that are now being carried on by Mr. Mosely at the foot of Mount Zion, and in and within the Protestant cemetery. He states that large cisterns filled with clear pure water have been brought to light, also baths hewn out of the rock, all evidently dating from the Moabitish epoch. The same writer states that the English Society for the Exploration of Palestine have found, in the plain of Ramlek, a very valuable marble tablet, with a Greek inscription and also some obscure Hebrew inscriptions. The German Consul having claimed this valuable relic, as well as the English Society, it has been handed over provisionally to the local authorities till the dispute be settled. It is to be feared, however, when the value of the discovery is known, that the Turkish Government will claim the tablet for themselves.

DR. GEORGE SCHWEINFURTH is at present at Riga, where he intends to remain till he has completed the arrangement of the various extensive collections of plants which he has brought with him from Africa. It is reported that an extensive and valuable collection of African plants has been bequeathed to him by an English traveller now deceased, and this will be incorporated with his own to form one great systematised compendium of the flora of Africa.

WE learn that Professor Raimondi, the Italian geographer and naturalist of Peru, well known for his researches, which have been conducted for upwards of thirty years in that country, has just published a remarkable work on the mineral resources of the environs of Huaraz. Great attention is now being devoted to mining in Peru.

Considerable progress has been made with the construction of railways in the north (the most fertile portion), and the Government has agreed to pay the passage from Europe of all geologists, mining engineers, and others, who may be deputed to Peru by societies possessing not less than twenty-five million francs capital.

An interesting paper on the subject of precious stones appears in a recent number of the *St. Petersburg Gazette*. M. Gilson, the author, has just completed a journey round the world, undertaken for the express purpose of making enquiries into this branch of trade. From his researches it appears that, owing principally to the plentiful supply from the South African fields, diamonds are at a lower price than they have been for ten years past. Pearls and emeralds, on the other hand, are at a premium. At New York an opal about the size of a moderately-sized olive would fetch, at the present time, about 1,200 roubles, a sapphire of the same size would be worth 1,800 roubles, an emerald 10,000, a diamond 18,000, and a ruby 50,000. In Europe these prices would vary somewhat, opals and sapphires fetching more and emeralds less. Pearls are now brought from Central America, California, and the Persian Gulf, but they none of them rival those of the East Indies. The diamonds annually imported from South Africa into America are worth about seven million roubles, and the importation into Europe averages about the same. Many of them are of good size, and nearly all without exception of a yellowish tinge, the consequence being that diamonds of similar colour have actually gone down 75 per cent. in the market. Diamonds, indeed, would have fallen lower in value had it not been that the realisation of enormous fortunes in America through petroleum and military contracts created an excessive demand. A similar depreciation in the price of diamonds was occasioned at the time of the discovery of the Brazilian diamond mines, Golconda having previously supplied the market. But the stones soon regained their original value, and it may be confidently expected that the effect of the African diggings will be also merely temporary.

In an article on "one of the Indian Outbreaks," the *Nation* has some remarks which will interest many of our readers:—

"One of the old and just Indian grievances, one of their excuses for their early assaults upon travellers on the Santa Fé trail and the Platte route, was the unnecessary killing of buffalo. The protection of the buffalo and the utilisation of the entire carcass when slain is a strong point in their character, and its wanton destruction excites great indignation. With the spread of settlements the grazing limits have yearly grown less, and now that railroads penetrate the heart of the range very many thousands of these animals are annually slaughtered, both in and out of season, with no intention or possibility on the hunters' part of taking a tenth part of each. Some shoot them for their tongues, some for their hides (not for robes, but as a heavy leather). Some actually cut the shaggy hair to mix fraudulently with coarse Mexican wool; some ship the hind-quarters East for food. In certain localities the dead may be seen as thick as horses on a battle-field, polluting the pure air with a horrible stench. It is understood that in the last treaty with the tribes before mentioned, it was provided that buffalo should not be hunted by the whites in the country south of the Arkansas. If this article exists (and they believe that it does), the whites no more regard it than do the buffaloes themselves respect the parallels of latitude. The hunters are ubiquitous, and the herds are fast being destroyed. Indeed, systematic extermination of this animal is seriously advocated by many as the speediest solution of the Indian problem, on the ground that when they are gone the Indians must starve or become perfectly docile. Meanwhile this flagrant violation of their treaty-rights excites their bitter anger, and last year they sent direct messages that if their cattle (the buffalo) were thus hunted they would compensate themselves among the white men's herds, which are now so extensive and valuable on the upper Arkansas."

As a necessary complement to the street railways which have been lately opened to connect the lower with the upper town of Bahia, in Brazil, we hear that to avoid the extreme gradient of the principal hill, a powerful hydraulic elevator was likewise opened to the public at the end of last year, an improvement so great, especially for the commercial community, that from 4,000 to 5,000 persons daily avail themselves of it, thus superseding the classic Bahia sedan chair carried by negroes, which for more than one century was the only mode of reaching the upper from the lower or commercial town. Many of the sugar planters in this district, in consequence of a disease difficult to eradicate which has attacked the sugar cane, have turned their attention to coffee planting. A similar experience was undergone at Rio de Janeiro, between the years 1816 and 1824, when the planters of that province abandoned for the same reason the culture of the sugar cane for that of coffee, a change which led to immense progress and great accumulation of wealth in the capital of the empire.

OFFICIAL reports from Carthage, in Columbia, tell us that a party of American and Canadian miners, nineteen in number, arrived there from New York a few months back, styling themselves the South American Joint Stock Mining Company, to proceed up the River Sinn to "prospect" for gold; they brought with them a steam gold washing apparatus. It is well known there that rich gold mines existed and were worked in the neighbourhood of the Sinn by the Indians, but were skillfully concealed by them on the Spaniards taking possession of the country, since which time all trace of their whereabouts has been lost. Gold dust has for a long time past been constantly washed out in considerable quantities by the natives living on the banks of the Sinn, but whence the river brought down this dust has never yet been discovered, owing partly to the great difficulties to be encountered in exploring the country (which is one vast forest) through which the Sinn flows. The chief of the above-named expedition, however, assured Consul Mallet that they intended to overcome all obstacles, and were determined not to desist from their search until they had traced out the sources of the gold dust.

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HOFFMANN, F. W. *Otto von Guericke, Bürgermeister der Stadt Magdeburg. Ein Lebensbild aus der deutschen Geschichte: d. 17. Jahrh. Magdeburg: Baensch*. 14 Thl.
KUMMER, C. F. *Die Jungfrau von Orleans in der Dichtung*. Wien: Hölder.
LONSDALE, H. *The Worthies of Cumberland*. John Dalton, F.R.S. Routledge.

History.

- BAUMEFORT, V. de. *Cession de la Ville et de l'Etat d'Avignon au Pape Clément VI. par Jeanne I^{re}, reine de Naples*. Apt: Imp. Jean.
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A LONDON ALDERMAN'S JOURNAL, 1796-7.

(Continued from page 182.)

"MONDAY, 14 Nov. Exceedingly cold and raw. The report of the Chamberlain's death seems to be premature; he is better and gone into the country. I dined with J. P. and B. Collett, our drowsy companion.

"Tuesday, 15 Nov. A fine day but cold and towards evening rain. Paris papers of the 9th, but nothing further respecting the negotiation. A proclamation in Ireland states certain counties in a state of insurrection. The storm approaches, stocks fell 1 per cent. Dined with J. P. at the York, an admirable pick, intending to go on to Drury Lane to see *The Conspiracy* by Mr Jephson for the first time, but as usual sat too long, being joined by Mr Rowland Webster from Stockton. When I parted with my friends, as the saying is, I fetched a walk to stretch my legs. I walked up Holborn, Oxford Street, New Bond Street, St. James's Street, Piccadilly, the Strand, to an oyster shop, very decently fitted up in Mitre Court, Fleet Street, where Mr Webster promised to meet me, but did not come. I had however some very good oysters, called for half an hour at the York, and in bed at twelve.

"Saturday 19 Nov. 1796. . . . Yesterday began the election for the Boro' of Southwark—one member—George Tierney and George Woodford Thelluson, Esq. Candidates. Tierney was proposed by Alcock and Thelluson by R. Carpenter Smith. The former returned, and a poll demanded. Numbers at conclusion of the day were Tierney 487, Thelluson 316. My cordial wishes go with Tierney, advocate for the people.

"Tuesday, 22 Nov. On Saturday Mr Ellis the confidential friend of Lord Malmesbury arrived in town from Paris. The precise object of his return it is impossible to say and every conjecture may be void of truth, but it is not improbable to believe, that he is sent over to inform our administration of the real state of affairs, and to give other information of circumstances which his Lordship may not think it proper to commit to paper. . . . On the end of the second day's poll the numbers were Tierney 823, Thelluson 810.

"Wednesday 23 Nov. The third day of the Boro' poll terminated viz. Mr Thelluson 1283 Tierney 1119 Majority 164.

"Paris papers up to the 19th were received, but extremely barren of intelligence, if we except a very interesting correspondence which took place on the 12th and 13th between Lord Malmesbury and Charles Delacroix, the result of which his Lordship sends home by Mr Ellis private. The Frenchmen display no ambiguity but at once publish the whole. Monsieur Delacroix asks 'Whether on each official communication it will be necessary for Lord M. to send home a courier to receive fresh instructions?' His Lordship asks 'Whether he is to consider the note official?' The Frenchman says 'Yes,' and away goes Mr Ellis. How is it possible for the Frenchmen to know even the disposition of the Emperor towards peace. It appears clearer than daylight, nay, Lord M. acknowledges, that he has no power, and his instructions as clearly state that he has no power from us to treat without the Emperor. Where then or how is it proved that on our part there is any sincerity in this negotiation? I believe there is none.

"The Lisbon mail, that the Court of Portugal has given a decisive answer to the Court of Spain that she is resolved at all hazard to adhere to her engagements with Great Britain. Of course Mr. Bull must send her money and stores!

"Friday 2 Dec. 1796. The frost still continues with equal if not increased severity and skating going forward in every quarter where water is, and boys sliding in every street. Men are clad in their great, or their little great-coats, and the ladies appear gay in their spencers and furs. I never recollect weather so very severe at so early a period of the year. Large bodies of ice I saw floating on the river without the aid of snow, and every indication of a hard winter.

"The Prince of Wales has been to Bath and received the freedom of the city from the corporation, presented in a most fulsome panegyric on his Royal Highness's virtues, in a speech from Mr Palmer the mayor, which must nauseate the prince if he has sensibility left, and disgust the nation, when it is notorious that there is not a man of honour in the

country who does not reprobate his conduct and say that he is a disgrace to his rank. I am for one ashamed of such adulatory compliments. Capt. Shaw called about three, but he was engaged to dinner. We walked as far as Queen Street together. I then called on Mr. Sadler in King's Arms Yard, but he had select friends, and from thence to Mr. Turnbull's but the house was shut up. . . . I had then no alternative, I retired to the York and dined solus at the expense of 6/, but the evening afterwards hung heavy; I saw no person calculated for conversation who was not engaged. I read all the papers both of town and country, and I had no books. Eight o'clock arrived, but still I had two or three hours on hand. I resolved to walk over the bridges, and return through the Strand. The weather was exceedingly cold and the streets very slippery and disagreeable—I again dropped into the York. I found the same persons there whom I had left; I had oysters for my supper and a glass of punch and went to bed soon after ten, having passed as comfortable an afternoon as I ever recollect to have experienced in London or elsewhere. Without pen ink or paper I believe that I should very soon wither in the midst of plenty.

"Tuesday 6 Dec. Cold and frost still continue. . . . On the river the oldest man scarcely remembers so much ice at so early a period of the season and particularly without snow. . . . The letters from Buonaparte and Alexander Berthier to the Directory are published in this day's papers. The conflict continued with little or no intermission for three days at in or near Areole, which will be recorded famous in history from the event. The battle was fought with enthusiasm on both sides, but at length on the 17th of Nov^r, the Austrians under General Alvinzi gave way. . . . Buonaparte manifested all the points of a great military character—he was everywhere in the battle—he fought on horseback and on foot—and at one time, when his troops were giving way, called out 'If ye are the men who obtained the battle of Lodi, follow me,' rushing on at their head amid a torrent of fire, gave a turn to the fortune of the day, and added to his arms new wreaths of glory and honour. He was well seconded by Argenteau and Massena, but several other general officers fell, two killed and five wounded. Their loss must have been considerable, tho' 'tis never mentioned. It was intended the next day to attack General Davidovitch which must decide the fate of Italy. Buonaparte says it will fall in a fortnight. Mr. Nutt says never!

"Capt. Shaw dined with me at the York rather early, and afterwards went in time to get a place in the pit of Drury Lane. Miss Farren on Tuesday last disappointed the public by not appearing when her name was advertised to perform. In consequence the play was changed, and the letters which appeared in the papers were not thought sufficiently explanatory or satisfactory. This evening was represented for the first time the same play which was to have been performed on Tuesday, *The Force of Ridicule*. Miss Farren appeared in the first scene and was received with perfect good humour by the audience, and the very slender tokens of disapprobation which were attempted were soon silenced by the general & united plaudits of a crowded theatre. Mr. Wroughton made an apology for the author, and the play was suffered to proceed. It had a patient hearing to the end with very slender interruption, and then condemned *und voce*. Who the author is I know not, but since my knowledge of the Theatre, which now is no inconsiderable portion of a man's life, I never saw so puerile, so ridiculous, so stupid, so uninteresting a performance, devoid of every point that ought to constitute a comedy. *Richard Cœur de Lion* was the after piece, but I did not stay. I stretched away to Mr. Nutt's, where I eat my bread and cheese and returned at half past eleven. . . . Francis Dunn and Will. Arnold were yesterday executed for murder, and the first malefactors conveyed to the new Surgeons Hall in Lincoln's Inn Fields. They were conveyed in a cart, their heads supported by ten chests for the public to see; I think, contrary to all decency and the laws of humanity in a country like this. I hope it will not be repeated. At a Court of Common Council yesterday £100,000 was agreed to be subscribed to the loan, but where the money is to come from the Lord knows.

"Wednesday, 7 Dec^r. 1796. Cold, raw and unpleasant. Dined very comfortably at Mr. Nutt's with Mr. Geo. Lempriere. Excellent pea-soup, meat pie, doe venison, two broiled haddock, shoulder of veal

admirably roasted, rice pudding and toasted cheese. Played two rubbers at whist, bread and cheese for supper, and home at twelve. . . . James Dyer was this morning executed for forgery. On Sunday several persons lost their lives on the Serpentine and in St. James's Park. I believe there are more fools in this town than in any place on earth.

"Thursday, 22 Dec. A Committee of the House of Commons pronounced George Tierney Esq. duly elected for the Borough of Southwark, and George Woodford Thelluson, Esq. not duly elected. The Clerk of the House amended the return accordingly when Mr. Tierney took the oaths and his seat. A more important decision is not recorded in the history of the House of Commons, and tho' it is with truth to be declared that the body in mass (at least the majority) is servile and corrupt, yet when a point is referred to a Committee of individuals, they always decide as men of honour, having no bias in their conduct, but the law of justice and truth.

"Saturday, 24 Dec. Papers this morning announce positively the failure of Lord Malmesbury's mission; that he has been ordered to quit Paris in 48 hours, and is expected daily in London. Stocks fell three per cent, and may now be stated at 55. I dined at Mr. George Field's with James Tatlock, &c. . . . Harvey Combe and Mr. Jeffries, member for Coventry, who came direct from the House and said that Mr. Pitt had in form communicated the failure of the Embassy, and that on Monday he should bring down a message from the King on the subject.

"Dec. 25. Christmas Day and perhaps the coldest ever remembered in the country; the thermometer is stated to have fallen to 28½ degrees below freezing point. I was at my lodgings till near four . . . took place in the Bedford Coach for to-morrow, slept at the White Hart. A fire this morning took place at the Rose and Crown, which threatened the neighbourhood but was happily extinguished. Mr. Nutt conceives the multitude in Paris so bent at all hazard on peace that Lord M. will not be permitted to come over! *Risum teneatis!*

"Dec. 26. In the coach at five—arrived at Bedford at half-past two. My companions were a Mr. Fisher and others of the same profession whose names perhaps were never recorded before, unless at their baptism; they were collectors of eggs, and of cocks & hens, &c., for the poulterers in London. Mr. Cockman dined with us; I was rather fatigued and went early to roost.

"Thursday, 29 Dec. Left Bedford at half past ten, & arrived in Bridge Street at nine. Supped at John's. New loan for 4 to 5 discount, a blessed prospect for the subscribers!

"1797.

"Thursday, 12 Jan^r. Yesterday an address from the City was presented to the King, when William Horne an obscure attorney in Paternoster Row, and late elected alderman of Castle Baynard in the room of Sir John Hopkins, was weak enough to follow the example of his predecessor and returned home a knight. If there is a contemptible title on earth, it is this kind of knighthood. . . .

"Tuesday, 17 Jan^r. Considerable fires have happened in New York, Boston and Savannah, imputed to the villainy of the French emigrants, whether so or not, 'tis impossible to say, but there is nothing so atrocious and diabolical of which a Frenchman in my opinion is not capable, and therefore tho' many unfortunate and worthy people may suffer, yet if I had the rule of the Roast, not one single French person should be permitted to remain in this country.

"Wednesday, 18 Jan^r. Her Majesty's Birthday, and as such observed at Court, which I understand was not so numerous or brilliant as it sometimes is. The houses of some tradesmen were illuminated *ex necessitate*, and so was the Mansion House according to custom. . . . In the evening I sauntered to John's where Mr. Alderman Curtis soon joined us. He had dined very pleasantly, he said, at Mr. Pitt's in Downing Street with a party of about twenty, an admirable good dinner and good wine and plenty of it. I had no doubt of it, and the worthy alderman I am sure had had his proportion of it.

"Monday, 23 Jan^r. Mr. Dick and Mr. Andrews again dined with us; afterwards we pushed for Covent Garden Theatre. The house overflowing—with difficulty got a back seat in a side box up two

pair of stairs. *Cure for the Heartache*, a new esteemed fashionable Comedy from the pen of Mr. Morton was the play. If I did not know to what a miserable ebb the Drama is reduced I should have been surprised to see so many people sit so long patiently to hear such stuff! a collection of trash just calculated to hit the depraved taste of the times. Coming from Bedford some weeks ago with Mr. Madox the brewer and speaking of beer, he said 'As long as you continue to drink the liquid which we give you for beer, we shall never give you better,' and so I fear it is with the drama—as long as the town can listen to and laugh at such stuff as the *Cure for the Heartache*, there is very little chance for the revival of chaste and ancient Comedy. *The Jealous Wife*, *Clandestine Marriage* both by the elder Coleman, and *The School for Scandal* & *The Rivals* both by Sheridan are the only plays that I recollect to have escaped oblivion since I first attended the theatre, which is now thirty years. *Harlequin* and *Oberon* was the pantomimical farce, in which was introduced the Fantochini or dancing figures which was the only part of our amusement that I thought worth attention, for even the pantomime was poor. We eat oysters in Mitre Court and spent an hour afterwards at the Globe.

"Friday, 3rd Feb^r. The night before last a notorious offender named Lancaster was shot near Whitstone by Lord Strathmore. Paris papers arrived in date 27th ulto. with an account of the most important news that the Austrians in their attempt to relieve Mantua had been signally defeated in five battles fought with most distinguished valour by the successful Buonaparte, and the Austrians by Alvingry, in which the latter lost 6000 men killed and wounded and 25000 prisoners, &c. with all the oxen, grain, and other provisions destined for the relief of the besieged town. Such is the account subscribed by Buonaparte and Alexander Berthier, but still there is a certain class of men who will not believe anything that they wish not to be true. . . . Government have received no official accounts. How the devil should they, unless they could receive them in balloons? . . . Such is the wonderful success ascribed to the good fortune and talents of this prodigy of Man in Arms—Buonaparte—whose fame stands recorded infinitely beyond what we read of either in ancient or modern times. The Alexanders and Cæsars of whom we have read, the Aurungzeb and the great Zingis of the East shrink into nothing when compared to the mighty achievements of this young warrior. This conquest in my opinion decides the fate of Mantua, and the possessions of the Emperor in Italy; probably in the event it may procure for them a separate peace, notwithstanding the repeated and constant declaration of Mr. Bull and his associates that as he, Mr. Bull, will not treat without the Emperor, that the Emperor will not treat without Mr. Bull. Time will shew. I dined with Mr. Parkinson, & afterwards supped with Mr. Nutt, who waits for particulars from the adverse side, loath to admit what he is afraid will prove true.

(To be continued.)

AMERICAN NOTES.

Boston, Mass. : July 31, 1874.

A VERY fair attempt at novel writing is Mr. Frank Lee Benedict's *John Worthington's Name*. In general, we have to depend for novels upon publishers' selections from your full English lists for reprints. These make about nine-tenths of all we get, in addition to which are a small number of American novels, and a great many translations, especially from the German. *John Worthington's Name* is very readable, and if it is not taken for too literal a copy of the excesses of New York society, it may be commended. Much more worthy of note are Mr. Charles Francis Adams' *Memoirs of his Father, John Quincy Adams*, the second volume of which has just appeared. They consist almost entirely of his diary, and a great part of this, and more especially of what is contained in the first volume, is very far from exciting. There is none of the levity that cannot but make a diary interesting with its fresh jotting down of striking incidents, but in place of that there is a very serious, and at times amusingly pompous, record of his daily life, with very conscientious moralising upon it. The first volume carries his

diary down to the date of his appointment to the Russian mission, and the second is for the most part filled by his account of his sojourn in that country. Although few readers will be tempted to this book by the picture it gives of Mr. Adams, there is a great deal in it that is interesting to those who care for the history of this country during the last hundred years. More especially will this be true of the later volumes.

The autumn announcements of the publishers are not complete yet, and their shortened lists will probably show some of the ill effects of last year's panic. Osgood & Co., of this city, however, are to publish a new volume, *Poetry and Criticism*, by Mr. Emerson; Mr. John Fiske's *Cosmic Philosophy*, which will appear simultaneously in London; *Chemical and Geological Essays*, by Professor T. Sterry Hunt; a new volume of poems by Dr. O. W. Holmes; a drama by Mr. Bayard Taylor; and a new novel, *Idolatri*, by Mr. Julian Hawthorne, son of the great Hawthorne. This gentleman's earlier novel, *Bressant*, some of your readers may recall; it was very warmly praised in England, much more so than in this country, where the inheritance of his father's genius was less vividly detected. Dr. E. H. Clarke, who has raised a mighty tempest by his book, *Sex in Education*, is writing a new volume on the education of girls. The discussion has already crossed the water; for a time it was very hot here. Various persons felt aggrieved at some of his remarks, and answers to what he said were very numerous. Such were *Sex and Education*, *No Sex in Education*. With us this is a very pressing question, and those who frown on all distinctions of sex are very merciless in their treatment of their adversaries, giving no quarter. Meanwhile, the question is coming much nearer settlement, and in the best way, by being taken out of discussion, and having something practical done about it. Only a few weeks ago Harvard College held its first examinations for women. The applicants were very few in number, less than a dozen, in fact, but although the official report has not yet been published, it is understood that they did well. The professors of the college had the entire charge of the examinations, but the credit for arranging the details, and that in the face of some opposition and considerable indifference, belongs to a number of ladies of this city. The plan is based upon the system of the Cambridge examinations for women.

At the recent annual meeting of the Philological Society at Hartford, Dr. J. Hammond Trumbull read an interesting paper on the Indian method of notation. In general, the American Indians counted either with their fingers alone, or with their fingers and toes, but in Paraguay some of the tribes counted only to four, and expressed that numeral by a word meaning ostrich-toes. Professor Whitney, of Yale College, read a paper on the Proportional Elements of English utterance, in which he gave some rather curious results of his investigations. He chose passages from Shakespeare, Milton, Gray, Bryant, and Tennyson for poetry; and from the English version of the Bible, Dr. Johnson, Goldsmith, Carlyle, and Macaulay for prose; and read aloud until he had uttered a thousand sounds. The proportion of vowels to consonants he found to be 37.3 to 62.7, a trifle greater than the German, but less than the French, .40; Gothic, .41; Sanskrit, .42; Latin, .44; Greek, .46. Their ratio in English is as 1 to 1.682. The average number of syllables in a word he found to be 1.358.

We are expecting the speedy arrival of the Duc de Montpensier's collection of paintings, in preparation for which the exhibition of Mr. Sumner's collection closes to-morrow, in order to make room for the Spanish pictures. This collection is of very meagre interest; many of the engravings are of value, but the pictures only shine by an absence of positive worthlessness. They were so much better than those any other member of Congress would have bought or commended, that they have

given Mr. Sumner great fame as a patron of the arts. He knew enough to oppose most of the claims of "lobbying" artists, and for that, although he was not always successful, he deserves our gratitude. When one thinks of the way the Duc de Montpensier's pictures will be received in this country, and of the wretchedly lit, squalid hall in Seville into which some of the best Murillos are crowded, one grows jealous of the Spaniards, and very much dissatisfied with the present distribution of the works of the old masters.

T. S. PERRY.

CORRESPONDENCE.

DR. SCHLIEHMANN AND THE EXCAVATIONS ON THE ACROPOLIS.

Athens: August 6, 1874.

You will have seen that, from motives unknown to me, but probably on account of my still pending suit with the Turkish Government, the King of Greece has cancelled the permission granted me by the Ministry, to demolish the great Venetian Tower in the Acropolis. But since His Majesty seems to have no objection to the work being done by anybody else, I have at once paid the cost of the demolition, say 13,000 dr., or 465*l.*, to the Archaeological Society here, which has agreed to employ the money for the purpose.

I avail myself of this opportunity to make a few remarks on the *Treasury of Minyas* at Orchomenos, which I have just visited on a tour through Northern Greece. This monument is built of fine white marble, but for the rest in the same style as the well-known Treasury of Atreus at Mycene. Each stone is provided with two small, but very deep holes, and in many of them remain points of the brass nails, which retained the brazen plates of the interior covering. The large block, which covers the door, must have been ornamented in a different way, for it has two large and two small holes. Only about one half of the subterranean dome remains, the whole upper part having been destroyed by the pious zeal of the builder of the church, which seems to occupy the precise site of the sanctuary of the Graces in the precincts of the monastery. Most of the marbles have been used for the floor of the church, the rest for the walls. The chronology of this spoliation I find in the two inscriptions, in a barbarous Greek, which are fixed in the church walls, and which attest that the church was built in the year 6382 after the creation of the world, i.e., in 874 after Christ, or exactly a thousand years ago. The great hollow around the Treasury, and the heaps of rubbish above it, prove that the builder of the church has had to make a large excavation to get out the stones, and that the monument must have been both filled and covered with rubbish. The second spoliation was perpetrated only twelve years ago, in 1862, by the present mayor (*δημαρχος*) of Orchomenos, Mr. Sgourdakes, who has dug up and removed all the marble blocks of the long and broad approach, or passage, which led through the slope to the door of the Treasury, and employed the stones to build a new church, although the three already existing churches were four and six times sufficient to hold all the inhabitants of the town and the adjoining village. Several of these marbles were of such immense proportions that the mayor was able to cut columns out of them.

King Minyas must have reigned several generations before the time of Homer, who only mentions his name as an epithet of the city "*Ὀρχομενὸς Μινυῖος*" (Iliad II. 511). The Treasury was in a perfect state of preservation when visited by Pausanias in the second half of the second century after Christ, for he writes, (IX. Chapter 38): "*Θησαυρὸς δὲ ὁ Μινυῶν θαύμα τῶν ἐν τῇ Ἑλλάδι ὄντων καὶ τῶν ἐξωτῶν οὐδὲν ὅστρον, πεποιθὲν τρόπον τοῦτον. Λίθον μὲν εἰργασται, σχῆμα δὲ περιφερὲς ἴστω ἀντὶ τοῦ οὐκ εἰς ἀγὰν οὐδ' ἀνηγμένην τὸν δὲ ἀνωτάτω τῶν λίθων φασὶν ἀρρομίαν παντὶ εἶναι τῷ οἰκοδομητῇ.*"

I have no doubt that in excavating this Treasury

many objects will be found which will be as many pages of the history of the so-called heroic age. I have therefore requested the Archaeological Society to begin the excavations at once at my expense.

DR. H. SCHLIEHMANN.

SCIENCE.

MEETING OF THE BRITISH ASSOCIATION AT BELFAST.—(Wednesday, August 19, 1874.)

ADDRESS of John Tyndall, F.R.S., D.C.L. Oxon., LL.D. Cantab., F.C.P.S., Professor of Natural Philosophy in the Royal Institution, President.

An impulse inherent in primeval man turned his thoughts and questionings betimes towards the sources of natural phenomena. The same impulse, inherited and intensified, is the spur of scientific action to-day. Determined by it, by a process of abstraction from experience we form physical theories which lie beyond the pale of experience, but which satisfy the desire of the mind to see every natural occurrence resting upon a cause. In forming their notions of the origin of things, our earliest historic (and doubtless, we might add, our prehistoric) ancestors pursued, as far as their intelligence permitted, the same course. They also fell back upon experience, but with this difference—that the particular experiences which furnished the web and woof of their theories were drawn, not from the study of nature, but from what lay much closer to them, the observation of men. Their theories accordingly took an anthropomorphic form. To supersensual beings, which, "however potent and invisible, were nothing but a species of human creatures, perhaps raised from among mankind, and retaining all human passions and appetites,"* were handed over the rule and governance of natural phenomena.

Tested by observation and reflection, these early notions failed in the long run to satisfy the more penetrating intellects of our race. Far in the depths of history we find men of exceptional power differentiating themselves from the crowd, rejecting these anthropomorphic notions, and seeking to connect natural phenomena with their physical principles. But long prior to these purer efforts of the understanding the merchant had been abroad, and rendered the philosopher possible; commerce had been developed, wealth amassed, leisure for travel and for speculation secured, while races educated under different conditions, and therefore differently informed and endowed, had been stimulated and sharpened by mutual contact. In those regions where the commercial aristocracy of ancient Greece mingled with its eastern neighbours, the sciences were born, being nurtured and developed by free-thinking and courageous men. The state of things to be displaced may be gathered from a passage of Euripides quoted by Hume. "There is nothing in the world; no glory, no prosperity. The gods toss all into confusion; mix everything with its reverse, that all of us, from our ignorance and uncertainty, may pay them the more worship and reverence." Now, as science demands the radical extirpation of caprice and the absolute reliance upon law in nature, there grew with the growth of scientific notions a desire and determination to sweep from the field of theory this mob of gods and demons, and to place natural phenomena on a basis more congruent with themselves.

The problem which had been previously approached from above, was now attacked from below; theoretic effort passed from the super- to the sub-sensible. It was felt that to construct the universe in idea it was necessary to have some notion of its constituent parts—of what Lucretius subsequently called the "First Beginnings." Abstracting again from experience, the leaders of scientific speculation reached at length the pregnant doctrine of atoms and molecules, the latest developments of which were set forth with such power and clearness at the last meeting of the

* Hume, *Natural History of Religion*.

British Association. Thought no doubt had long hovered about this doctrine before it attained the precision and completeness which it assumed in the mind of Democritus, a philosopher who may well for a moment arrest our attention. "Few great men," says Lange, in his excellent *History of Materialism*, a work to the spirit and the letter of which I am equally indebted, "have been so despitely used by history as Democritus. In the distorted images sent down to us through unscientific traditions there remains of him almost nothing but the name of the 'laughing philosopher,' while figures of immeasurably smaller significance spread themselves at full length before us." Lange speaks of Bacon's high appreciation of Democritus—for ample illustrations of which I am indebted to my excellent friend Mr. Spedding, the learned editor and biographer of Bacon. It is evident, indeed, that Bacon considered Democritus to be a man of weightier metal than either Plato or Aristotle, though their philosophy "was noised and celebrated in the schools, amid the din and pomp of professors." It was not they, but Genseric and Attila and the barbarians, who destroyed the atomic philosophy. "For at a time when all human learning had suffered shipwreck, these planks of Aristotelian and Platonic philosophy, as being of a lighter and more inflated substance, were preserved and came down to us, while things more solid sank and almost passed into oblivion."

The principles enunciated by Democritus reveal his uncompromising antagonism to those who deduced the phenomena of nature from the caprices of the gods. They are briefly these: 1. From nothing comes nothing. Nothing that exists can be destroyed. All changes are due to the combination and separation of molecules. 2. Nothing happens by chance. Every occurrence has its cause from which it follows by necessity. 3. The only existing things are the atoms and empty space; all else is mere opinion. 4. The atoms are infinite in number, and infinitely various in form; they strike together, and the lateral motions and whirlings which thus arise are the beginnings of worlds. 5. The varieties of all things depend upon the varieties of their atoms, in number, size, and aggregation. 6. The soul consists of free, smooth, round atoms, like those of fire. These are the most mobile of all. They interpenetrate the whole body, and in their motions the phenomena of life arise. Thus the atoms of Democritus are individually without sensation; they combine in obedience to mechanical laws; and not only organic forms, but the phenomena of sensation and thought are also the result of their combination.

The great enigma, "the exquisite adaptation of one part of an organism to another part, and to the conditions of life," more especially the construction of the human body, Democritus made no attempt to solve. Empedocles, a man of more fiery and poetic nature, introduced the notion of love and hate among the atoms to account for their combination and separation. Noticing this gap in the doctrine of Democritus, he struck in with the penetrating thought, linked, however, with some wild speculation, that it lay in the very nature of those combinations which were suited to their ends (in other words, in harmony with their environment) to maintain themselves, while unfit combinations, having no proper habitat, must rapidly disappear. Thus more than 2,000 years ago the doctrine of the "survival of the fittest," which in our day, not on the basis of vague conjecture, but of positive knowledge, has been raised to such extraordinary significance, had received at all events partial enunciation.*

Epicurus, said to be the son of a poor school-master at Samos, is the next dominant figure in the history of the atomic philosophy. He mastered the writings of Democritus, heard lectures in Athens, returned to Samos, and subse-

quently wandered through various countries. He finally returned to Athens, where he bought a garden, and surrounded himself by pupils, in the midst of whom he lived a pure and serene life, and died a peaceful death. His philosophy was almost identical with that of Democritus; but he never quoted either friend or foe. One main object of Epicurus was to free the world from superstition and the fear of death. Death he treated with indifference. It merely robs us of sensation. As long as we are, death is not; and when death is, we are not. Life has no more evil for him who has made up his mind that it is no evil not to live. He adored the gods, but not in the ordinary fashion. The idea of divine power, properly purified, he thought an elevating one. Still he taught, "Not he is godless who rejects the gods of the crowd, but rather he who accepts them." The gods were to him eternal and immortal beings, whose blessedness excluded every thought of care or occupation of any kind. Nature pursues her course in accordance with everlasting laws, the gods never interfering. They haunt

"The lucid interspace of world and world
Where never creeps a cloud or moves a wind,
Nor ever falls the least white star of snow,
Nor ever lowest roll of thunder moans,
Nor sound of human sorrow mounts to mar
Their sacred everlasting calm." *

Lange considers the relation of Epicurus to the gods subjective; the indication probably of an ethical requirement of his own nature. We cannot read history with open eyes, or study human nature to its depths, and fail to discern such a requirement. Man never has been, and he never will be satisfied with the operations and products of the Understanding alone; hence physical science cannot cover all the demands of his nature. But the history of the efforts made to satisfy these demands might be broadly described as a history of errors—the error consisting in ascribing fixity to that which is fluent, which varies as we vary, being gross when we are gross, and becoming, as our capacities widen, more abstract and sublime. On one great point the mind of Epicurus was at peace. He neither sought nor expected, here or hereafter, any personal profit from his relation to the gods. And it is assuredly a fact that loftiness and serenity of thought may be promoted by conceptions which involve no idea of profit of this kind. "Did I not believe," said a great man to me once, "that an Intelligence is at the heart of things, my life on earth would be intolerable." The utterer of these words is not, in my opinion, rendered less noble but more noble, by the fact that it was the need of ethical harmony here, and not the thought of personal profit hereafter, that prompted his observation.

A century and a half after the death of Epicurus, Lucretius wrote his great poem, "On the Nature of Things," in which he, a Roman, developed with extraordinary ardour the philosophy of his Greek predecessor. He wishes to win over his friend Memmius to the school of Epicurus; and although he has no rewards in a future life to offer, although his object appears to be a purely negative one, he addresses his friend with the heat of an apostle. His object, like that of his great forerunner, is the destruction of superstition; and considering that men trembled before every natural event as a direct monition from the gods, and that everlasting torture was also in prospect, the freedom aimed at by Lucretius might perhaps be deemed a positive good. "This terror," he says, "and darkness of mind must be dispelled, not by the rays of the sun and glittering shafts of days, but by the aspect and the law of nature." He refutes the notion that any thing can come out of nothing, or that that which is once begotten can be recalled to nothing. The first beginnings, the atoms, are indestructible, and into them all things can be dissolved at last. Bodies

are partly atoms, and partly combinations of atoms; but the atoms nothing can quench. They are strong in solid singleness, and by their denser combination, all things can be closely packed and exhibit enduring strength. He denies that matter is infinitely divisible. We come at length to the atoms, without which, as an imperishable substratum, all order in the generation and development of things would be destroyed.

The mechanical shock of the atoms being in his view the all-sufficient cause of things, he combats the notion that the constitution of nature has been in any way determined by intelligent design. The interaction of the atoms throughout infinite time rendered all manner of combinations possible. Of these the fit ones persisted, while the unfit ones disappeared. Not after sage deliberation did the atoms station themselves in the right places, nor did they bargain what motions they should assume. From all eternity they have been driven together, and after trying motions and unions of every kind, they fell at length into the arrangements out of which this system of things has been formed. His grand conception of the atoms falling silently through immeasurable ranges of space and time suggested the nebular hypothesis to Kant, its first propounder. "If you will apprehend and keep in mind these things, nature, free at once, and rid of her haughty lords, is seen to do all things spontaneously of herself, without the meddling of the gods."

During the centuries between the first of these three philosophers and the last, the human intellect was active in other fields than theirs. The sophists had run through their career. At Athens had appeared the three men, Socrates, Plato, and Aristotle, whose yoke remains to some extent unbroken to the present hour. Within this period also the School of Alexandria was founded, Euclid wrote his *Elements*, and he and others made some advance in optics. Archimedes had propounded the theory of the lever, and the principles of hydrostatics. Pythagoras had made his experiments on the harmonic intervals, while astronomy was immensely enriched by the discoveries of Hipparchus, who was followed by the historically more celebrated Ptolemy. Anatomy had been made the basis of Scientific medicine; and it is said by Draper* that vivisection then began. In fact, the science of ancient Greece had already cleared the world of the fantastic images of divinities operating capriciously through natural phenomena. It had shaken itself free from that fruitless scrutiny "by the internal light of the mind alone," which had vainly sought to transcend experience and reach a knowledge of ultimate causes. Instead of accidental observation, it had introduced observation with a purpose; instruments were employed to aid the senses; and scientific method was rendered in a great measure complete by the union of Induction and Experiment.

What, then, stopped its victorious advance? Why was the scientific intellect compelled, like an exhausted soil, to lie fallow for nearly two millenniums before it could regather the elements necessary to its fertility and strength? Bacon has already let us know one cause; Whewell ascribes this stationary period to four causes—obscurity of thought, servility, intolerance of disposition, enthusiasm of temper; and he gives striking examples of each.† But these characteristics must have had their causes, which lay in the circumstances of the time. Rome, and the other cities of the Empire, had fallen into moral putrefaction. Christianity had appeared, offering the gospel to the poor, and, by moderation if not asceticism of life, practically protesting against the profligacy of the age. The sufferings of the early Christians and the extraordinary exaltation of mind which enabled them to triumph over the diabolical tortures to which they were subjected, must have left traces not

* *History of the Intellectual Development of Europe*, p. 295.

† *History of the Inductive Sciences*, vol. i.

* Lange, 2nd edit. p. 23.

* Tennyson's *Lucretius*.

easily effaced. They scorned the earth, in view of that "building of God, that house not made with hands, eternal in the heavens." The Scriptures which ministered to their spiritual needs were also the measure of their science. When, for example, the celebrated question of antipodes came to be discussed, the Bible was with many the ultimate court of appeal. Augustine, who flourished A.D. 400, would not deny the rotundity of the earth; but he would deny the possible existence of inhabitants at the other side, "because no such race is recorded in Scripture among the descendants of Adam." Archbishop Boniface was shocked at the assumption of a "world of human beings out of the reach of the means of salvation." Thus reined in, science was not likely to make much progress. Later on the political and theological strife between the Church and civil governments, so powerfully depicted by Draper, must have done much to stifle investigation.

Whewell makes many wise and brave remarks regarding the spirit of the Middle Ages. It was a menial spirit. The seekers after natural knowledge had forsaken that fountain of living waters, the direct appeal to nature by observation and experiment, and had given themselves up to the remanipulation of the notions of their predecessors. It was a time when thought had become abject, and when the acceptance of mere authority led, as it always does in science, to intellectual death. Natural events, instead of being traced to physical, were referred to moral causes; while an exercise of the phantasy, almost as degrading as the spiritualism of the present day, took the place of scientific speculation. Then came the mysticism of the Middle Ages, Magic, Alchemy, the Neo-platonic philosophy, with its visionary though sublime abstractions, which caused men to look with shame upon their own bodies as hindrances to the absorption of the creature in the blessedness of the Creator. Finally came the Scholastic philosophy, a fusion, according to Lange, of the least mature notions of Aristotle with the Christianity of the west. Intellectual immobility was the result. As a traveller without a compass in a fog may wander long, imagining he is making way, and find himself after hours of toil at his starting-point, so the schoolmen, having tied and untied the same knots and formed and dissipated the same clouds, found themselves at the end of centuries in their old position.

With regard to the influence wielded by Aristotle in the Middle Ages, and which, though to a less extent, he still wields, I would ask permission to make one remark. When the human mind has achieved greatness and given evidence of extraordinary power in any domain, there is a tendency to credit it with similar power in all other domains. Thus theologians have found comfort and assurance in the thought that Newton dealt with the question of revelation, forgetful of the fact that the very devotion of his powers, through all the best years of his life, to a totally different class of ideas, not to speak of any natural disqualification, tended to render him less instead of more competent to deal with theological and historic questions. Goethe, starting from his established greatness as a poet, and indeed from his positive discoveries in natural history, produced a profound impression among the painters of Germany when he published his *Farbenlehre*, in which he endeavoured to overthrow Newton's theory of colours. This theory he deemed so obviously absurd, that he considered its author a charlatan, and attacked him with a corresponding vehemence of language. In the domain of natural history Goethe had made really considerable discoveries; and we have high authority for assuming that, had he devoted himself wholly to that side of science, he might have reached in it an eminence comparable with that which he attained as a poet. In sharpness of observation, in the detection of analogies wherever

apparently remote, in the classification and organisation of facts according to the analogies discerned, Goethe possessed extraordinary powers. These elements of scientific enquiry fall in with the discipline of the poet. But, on the other hand, a mind thus richly endowed in the direction of natural history, may be almost shorn of endowment as regards the more strictly called physical and mechanical sciences. Goethe was in this condition. He could not formulate distinct mechanical conceptions; he could not see the force of mechanical reasoning; and in regions where such reasoning reigns supreme he became a mere *ignus fatuus* to those who followed him.

I have sometimes permitted myself to compare Aristotle with Goethe, to credit the Stagirite with an almost superhuman power of amassing and systematising facts, but to consider him fatally defective on that side of the mind in respect to which incompleteness has just been ascribed to Goethe. Whewell refers the errors of Aristotle, not to a neglect of facts, but to "a neglect of the idea appropriate to the facts; the idea of Mechanical cause, which is Force, and the substitution of vague or inapplicable notions, involving only relations of space or emotions of wonder." This is doubtless true; but the word "neglect" implies mere intellectual misdirection, whereas in Aristotle, as in Goethe, it was not, I believe, misdirection, but sheer natural incapacity which lay at the root of his mistakes. As a physicist, Aristotle displayed what we should consider some of the worst attributes of a modern physical investigator—indistinctness of ideas, confusion of mind, and a confident use of language, which led to the delusive notion that he had really mastered his subject, while he as yet had failed to grasp even the elements of it. He put words in the place of things, subject in the place of object. He preached induction without practising it, inverting the true order of enquiry by passing from the general to the particular, instead of from the particular to the general. He made of the universe a closed sphere, in the centre of which he fixed the earth, proving from general principles, to his own satisfaction and to that of the world for near 2,000 years, that no other universe was possible. His notions of motion were entirely unphysical. It was natural or unnatural, better or worse, calm or violent—no real mechanical conception regarding it lying at the bottom of his mind. He affirmed that a vacuum could not exist, and proved that, if it did exist, motion in it would be impossible. He determined *à priori* how many species of animals must exist, and shows on general principles why animals must have such and such parts. When an eminent contemporary philosopher, who is far removed from errors of this kind, remembers these abuses of the *à priori* method, he will be able to make allowance for the jealousy of physicists as to the acceptance of so-called *à priori* truths. Aristotle's errors of detail were grave and numerous. He affirmed that only in man we had the beating of the heart, that the left side of the body was colder than the right, that men have more teeth than women, and that there is an empty space, not at the front, but at the back of every man's head.

There is one essential quality in physical conceptions which was entirely wanting in those of Aristotle and his followers. I wish it could be expressed by a word untainted by its associations; it signifies a capability of being placed as a coherent picture before the mind. The Germans express the act of picturing by the word *vorstellen*, and the picture they call a *Vorstellung*. We have no word in English which comes nearer to our requirements than *Imagination*, and, taken with its proper limitations, the word answers very well; but, as just intimated, it is tainted by its associations, and therefore objectionable to some minds. Compare, with reference to this capacity of mental presentation, the case of the Aristotelian, who refers the ascent of water in a pump to Nature's

abhorrence of a vacuum, with that of Pascal when he proposed to solve the question of atmospheric pressure by the ascent of the *Puy de Dome*. In the one case the terms of the explanation refuse to fall into place as a physical image; in the other the image is distinct, the fall and rise of the barometer being clearly figured as the balancing of two varying and opposing pressures.

During the drought of the Middle Ages in Christendom, the Arabian intellect, as forcibly shown by Draper, was active. With the intrusion of the Moors into Spain, cleanliness, order, learning, and refinement took the place of their opposites. When smitten with disease, the Christian peasant resorted to a shrine, the Moorish one to an instructed physician. The Arabs encouraged translations from the Greek philosophers, but not from the Greek poets. They turned in disgust "from the lewdness of our classical mythology, and denounced as an unpardonable blasphemy all connexion between the impure Olympian Jove and the Most High God." Draper traces still further than Whewell the Arab elements in our scientific terms. He gives examples of what Arabian men of science accomplished, dwelling particularly on Alhazen, who was the first to correct the Platonic notion that rays of light are emitted by the eye. He discovered atmospheric refraction, and points out that we see the sun and moon after they have set. He explains the enlargement of the sun and moon, and the shortening of the vertical diameters of both these bodies, when near the horizon. He is aware that the atmosphere decreases in density with increase of height, and actually fixes its height at 58½ miles. In the Book of the Balance of Wisdom, he sets forth the connexion between the weight of the atmosphere and its increasing density. He shows that a body will weigh differently in a rare and a dense atmosphere: he considers the force with which plunged bodies rise through heavier media. He understands the doctrine of the centre of gravity, and applies it to the investigation of balances and steelyards. He recognises gravity as a force, though he falls into the error of making it diminish as the distance, and of making it purely terrestrial. He knows the relation between the velocities, spaces, and times of falling bodies, and has distinct ideas of capillary attraction. He improves the hydrometer. The determination of the densities of bodies as given by Alhazen approach very closely to our own. "I join," says Draper, in the pious prayer of Alhazen, "that in the day of judgment the All-Merciful will take pity on the soul of Abur-Raihan, because he was the first of the race of men to construct a table of specific gravities." If all this be historic truth (and I have entire confidence in Dr. Draper), well may he "deplora the systematic manner in which the literature of Europe has contrived to put out of sight our scientific obligations to the Mahomedans."

Towards the close of the stationary period a word-weariness, if I may so express it, took more and more possession of men's minds. Christendom had become sick of the school philosophy and its verbal wastes, which led to no issue, but left the intellect in everlasting haze. Here and there was heard the voice of one impatiently crying in the wilderness, "Not unto Aristotle, not unto subtle hypotheses, not unto church, bible, or blind tradition, must we turn for a knowledge of the universe, but to the direct investigation of nature by observation and experiment." In 1543 the epoch-making work of Copernicus on the paths of the heavenly bodies appeared. The total crash of Aristotle's closed universe with the earth at its centre followed as a consequence; and "the earth moves" became a kind of watchword among intellectual freemen. Copernicus was Canon of the church of Frauenburg in the diocese of Ermeland. For three-and-thirty years he had withdrawn himself from the world and devoted himself to the consolidation of his great scheme of the solar

system. He made its blocks eternal; and even to those who feared it and desired its overthrow it was so obviously strong that they refrained for a time from meddling with it. In the last year of the life of Copernicus his book appeared: it is said that the old man received a copy of it a few days before his death, and then departed in peace.

The Italian philosopher Giordano Bruno was one of the earliest converts to the new astronomy. Taking Lucretius as his exemplar, he revived the notion of the infinity of worlds; and combining with it the doctrine of Copernicus, reached the sublime generalisation that the fixed stars are suns, scattered numberless through space and accompanied by satellites, which bear the same relation to them that our earth does to our sun, or our moon to our earth. This was an expansion of transcendent import; but Bruno came closer than this to our present line of thought. Struck with the problem of the generation and maintenance of organisms, and duly pondering it, he came to the conclusion that Nature in her productions does not imitate the technic of man. Her process is one of unravelling and unfolding. The infinity of forms under which matter appears were not imposed upon it by an external artificer; by its own intrinsic force and virtue it brings these forms forth. Matter is not the mere naked, empty *capacity* which philosophers have pictured her to be, but the universal mother, who brings forth all things as the fruit of her own womb.

This outspoken man was originally a Dominican monk. He was accused of heresy and had to fly, seeking refuge in Geneva, Paris, England, and Germany. In 1592 he fell into the hands of the Inquisition at Venice. He was imprisoned for many years, tried, degraded, excommunicated, and handed over to the Civil power, with the request that he should be treated gently and "without the shedding of blood." This meant that he was to be burnt; and burnt accordingly he was, on February 16, 1600. To escape a similar fate Galileo, thirty-three years afterwards, abjured, upon his knees and with his hand upon the holy gospels, the heliocentric doctrine. After Galileo came Kepler, who from his German home defied the power beyond the Alps. He traced out from pre-existing observations the laws of planetary motion. The problem was thus prepared for Newton, who bound those empirical laws together by the principle of gravitation.

During the Middle Ages the doctrine of atoms had to all appearance vanished from discussion. In all probability it held its ground among sober-minded and thoughtful men, though neither the church nor the world was prepared to hear of it with tolerance. Once, in the year 1348, it received distinct expression. But retraction by compulsion immediately followed, and thus discouraged, it slumbered till the 17th century, when it was revived by a contemporary of Hobbes and Descartes, the Père Gassendi.

The analytic and synthetic tendencies of the human mind exhibit themselves throughout history, great writers ranging themselves sometimes on the one side, sometimes on the other. Men of lofty feelings, and minds open to the elevating impressions produced by nature as a whole, whose satisfaction, therefore, is rather ethical than logical, have leaned to the synthetic side; while the analytic harmonises best with the more precise and more mechanical bias which seeks the satisfaction of the understanding. Some form of pantheism was usually adopted by the one, while a detached Creator, working more or less after the manner of men, was often assumed by the other. Gassendi is hardly to be ranked with either. Having formally acknowledged God as the great first cause, he immediately drops the idea, applies the known laws of mechanics to the atoms, and thence deduces all vital phenomena. God, who created earth and water, plants and animals, produced in the first place a definite number of atoms, which constituted the seed of all things.

Then began that series of combinations and decompositions which goes on at the present day, and which will continue in the future. The principle of every change resides in matter. In artificial productions the moving principle is different from the material worked upon; but in nature the agent works within, being the most active and mobile part of the material itself. Thus this bold ecclesiastic, without incurring the censure of the church or the world, contrives to outstrip Mr. Darwin. The same cast of mind which caused him to detach the Creator from his universe led him also to detach the soul from the body, though to the body he ascribes an influence so large as to render the soul almost unnecessary. The aberrations of reason were, in his view, an affair of the material brain. Mental disease is brain-disease; but then the immortal reason sits apart, and cannot be touched by the disease. The errors of madness are errors of the instruments, not of the performer.

It may be more than a mere result of education, connecting itself probably with the deeper mental structure of the two men, that the idea of Gassendi above enunciated is substantially the same as that expressed by Professor Clerk Maxwell at the close of the very noble lecture delivered by him at Bradford last year. According to both philosophers, the atoms, if I understand aright, are the *prepared materials*, the "manufactured articles," which, formed by the skill of the Highest, produce by their subsequent interaction all the phenomena of the material world. There seems to be this difference, however, between Gassendi and Maxwell. The one *postulates*, the other *infers* his first cause. In his manufactured articles, Professor Maxwell finds the basis of an induction, which enables him to scale philosophic heights considered inaccessible by Kant, and to take the logical step from the atoms to their Maker.

The atomic doctrine, in whole or in part, was entertained by Bacon, Descartes, Hobbes, Locke, Newton, Boyle, and their successors, until the chemical law of multiple proportions enabled Dalton to confer upon it an entirely new significance. In our day there are secessions from the theory, but it still stands firm. Only a year or two ago Sir William Thomson, with characteristic penetration, sought to determine the size of the atoms, or rather to fix the limits between which their sizes lie; while only last year the discourses of Williamson and Maxwell illustrate the present hold of the doctrine upon the foremost scientific minds. What these atoms, self-moved and self-positing, can and cannot accomplish in relation to life, is at the present moment the subject of profound scientific thought. I doubt the legitimacy of Maxwell's logic; but it is impossible not to feel the ethic glow with which his lecture concludes. There is, moreover, a Lucretian grandeur in his description of the steadfastness of the atoms:—"Natural causes, as we know, are at work, which tend to modify, if they do not at length destroy, all the arrangements and dimensions of the earth and the whole solar system. But though in the course of ages catastrophes have occurred and may yet occur in the heavens, though ancient systems may be dissolved and new systems evolved out of their ruins, the molecules out of which these systems are built, the foundation stones of the material universe, remain unbroken and unworn."

Ninety years subsequent to Gassendi the doctrine of bodily instruments, as it may be called, assumed immense importance in the hands of Bishop Butler, who, in his famous *Analogy of Religion*, developed, from his own point of view, and with consummate sagacity, a similar idea. The Bishop still influences superior minds; and it will repay us to dwell for a moment on his views. He draws the sharpest distinction between our real selves and our bodily instruments. He does not, as far as I remember, use the word "soul," possibly because the term was so hackneyed in his

day, as it had been for many generations previously. But he speaks of "living powers," "perceiving" or "percipient powers," "moving agents," "ourselves," in the same sense as we should employ the term "soul." He dwells upon the fact that limbs may be removed, and mortal diseases assail the body, while the mind almost up to the moment of death remains clear. He refers to sleep and to swoon, where the "living powers" are suspended, but not destroyed. He considers it quite as easy to conceive of an existence out of our bodies as in them; that we may animate a succession of bodies, the dissolution of all of them having no more tendency to dissolve our real selves, or "deprive us of living faculties—the faculties of perception and action—than the dissolution of any foreign matter which we are capable of receiving impressions from, or making use of for the common occasions of life." This is the key of the Bishop's position: "our organised bodies are no more a part of ourselves than any other matter around us." In proof of this he calls attention to the use of glasses, which "prepare objects" for the "percipient power" exactly as the eye does. The eye itself is no more percipient than the glass, and is quite as much the instrument of the true self, and also as foreign to the true self, as the glass is. "And if we see with our eyes only in the same manner as we do with glasses, the like may justly be concluded from analogy of all our senses."

Lucretius, as you are aware, reached a precisely opposite conclusion; and it certainly would be interesting, if not profitable, to us all, to hear what he would or could urge in opposition to the reasoning of the Bishop.

After giving a hypothetical dialogue between a disciple of Lucretius and Butler, the lecturer proceeds to remark that in one respect the Bishop was a product of his age. Long previous to his day the nature of the soul had been so favourite and general a topic of discussion, that, when the students of the University of Paris wished to know the leanings of a new Professor, they at once requested him to lecture upon the soul. About the time of Bishop Butler the question was not only agitated but extended. It was seen by the clear-witted men who entered this arena that many of their best arguments applied equally to brutes and men. The Bishop's arguments were of this character. He saw it, admitted it, accepted the consequences, and boldly embraced the whole animal world in his scheme of immortality.

Bishop Butler accepted with unwavering trust the chronology of the Old Testament, describing it as "confirmed by the natural and civil history of the world, collected from common historians, from the state of the earth, and from the late inventions of arts and sciences." These words mark progress: they must seem somewhat hoary to the Bishop's successors of to-day. It is hardly necessary to inform you that since his time the domain of the naturalist has been immensely extended—the whole science of geology, with its astounding revelations regarding the life of the ancient earth, having been created. The rigidity of old conceptions has been relaxed, the public mind being rendered gradually tolerant of the idea that not for six thousand, nor for sixty thousand, nor for six thousand thousand, but for aeons embracing untold millions of years, this earth has been the theatre of life and death. The riddle of the rocks has been read by the geologist and palaeontologist, from subcambrian depths to the deposits thickening over the sea-bottoms of to-day. And upon the leaves of that stone book are, as you know, stamped the characters, plainer and surer than those formed by the ink of history, which carry the mind back into abysses of past time compared with which the periods which satisfied Bishop Butler cease to have a visual angle. Everybody now knows this: all men admit it; still when they were first broached these verities of science found loud-tongued denunciators, who proclaimed not only their

baselessness considered scientifically, but their immorality considered as questions of ethics and religion: the Book of Genesis had stated the question in a different fashion; and science must necessarily go to pieces when it clashed with this authority. And as the seed of the thistle produces a thistle, and nothing else, so these objectors scatter their germs abroad, and reproduce their kind, ready to play again the part of their intellectual progenitors, to show the same virulence, the same ignorance, to achieve for a time the same success, and finally to suffer the same inexorable defeat. Surely the time must come at last when human nature in its entirety, whose legitimate demands it is admitted science alone cannot satisfy, will find interpreters and expositors of a different stamp from those rash and ill-informed persons who have been hitherto so ready to hurl themselves against every new scientific revelation, lest it should endanger what they are pleased to consider theirs.

The lode of discovery once struck, those petrified forms in which life was at one time active, increased to multitudes and demanded classification. The general fact soon became evident that none but the simplest forms of life lie lowest down, that as we climb higher and higher among the superimposed strata more perfect forms appear. The change, however, from form to form was not continuous—but by steps, some small, some great. "A section," says Mr. Huxley, "a hundred feet thick will exhibit at different heights a dozen species of Ammonite, none of which passes beyond its particular zone of limestone, or clay, into the zone below it, or into that above it." In the presence of such facts it was not possible to avoid the question:—Have these forms, showing, though in broken stages and with many irregularities, this unmistakable general advance, been subjected to no continuous law of growth or variation? Had our education been purely scientific, or had it been sufficiently detached from influences which, however ennobling in another domain, have always proved hindrances and delusions when introduced as factors into the domain of physics, the scientific mind ever could have swerved from the search for a law of growth, or allowed itself to accept the anthropomorphism which regarded each successive stratum as a kind of mechanic's bench for the manufacture of new species out of all relation to the old.

Biassed, however, by their previous education, the great majority of naturalists invoked a special creative act to account for the appearance of each new group of organisms. Doubtless there were numbers who were clear-headed enough to see that this was no explanation at all, that in point of fact it was an attempt, by the introduction of a greater difficulty, to account for a less. But having nothing to offer in the way of explanation, they for the most part held their peace. Still the thoughts of reflecting men naturally and necessarily simmered round the question. De Maillet, a contemporary of Newton, has been brought into notice by Professor Huxley as one who "had a notion of the modifiability of living forms." In my frequent conversations with him, the late Sir Benjamin Brodie, a man of highly philosophic mind, often drew my attention to the fact that, as early as 1794, Charles Darwin's grandfather was the pioneer of Charles Darwin. In 1801, and in subsequent years, the celebrated Lamarck, who produced so profound an impression on the public mind through the vigorous exposition of his views by the author of the *Vestiges of Creation*, endeavoured to show the development of species out of changes of habit and external condition. In 1813, Dr. Wells, the founder of our present theory of Dew, read before the Royal Society a paper in which, to use the words of Mr. Darwin, "he distinctly recognises the principle of natural selection; and this is the first recognition that has been indicated." The thoroughness and skill with which Wells pursued his work, and the ob-

vious independence of his character, rendered him long ago a favourite with me; and it gave me the liveliest pleasure to alight upon this additional testimony to his penetration. Professor Grant, Mr. Patrick Matthew, Von Buch, the author of the *Vestiges*, D'Hallory, and others,* by the enunciation of views more or less clear and correct, showed that the question had been fermenting long prior to the year 1858, when Mr. Darwin and Mr. Wallace simultaneously but independently placed their closely concurrent views upon the subject before the Linnean Society.

These papers were followed in 1859 by the publication of the first edition of *The Origin of Species*. All great things come slowly to the birth. Copernicus, as I informed you, pondered his great work for thirty-three years. Newton for nearly twenty years kept the idea of Gravitation before his mind; for twenty years also he dwelt upon his discovery of Fluxions, and doubtless would have continued to make it the object of his private thought, had he not found that Leibnitz was upon his track. Darwin for two and twenty years pondered the problem of the origin of species, and doubtless he would have continued to do so had he not found Wallace upon his track.† A concentrated, but full and powerful epitome of his labours was the consequence. The book was by no means an easy one; and probably not one in every score of those who then attacked it had read its pages through, or were competent to grasp their significance if they had. I do not say this merely to discredit them; for there were in those days some really eminent scientific men, entirely raised above the heat of popular prejudice, willing to accept any conclusion that science had to offer, provided it was duly backed by fact and argument, and who entirely mistook Mr. Darwin's views. In fact the work needed an expounder; and it found one in Mr. Huxley. I know nothing more admirable in the way of scientific exposition than those early articles of his on the origin of species. He swept the curve of discussion through the really significant points of the subject, enriched his exposition with profound original remarks and reflections, often summing up in a single pithy sentence an argument which a less compact mind would have spread over pages. But there is one impression made by the book itself which no exposition of it, however luminous, can convey; and that is the impression of the vast amount of labour, both of observation and of thought, implied in its production. Let us glance at its principles.

It is conceded on all hands that what are called varieties are continually produced. The rule is probably without exception. No chick and no child is in all respects and particulars the counterpart of its brother or sister; and in such differences we have "variety" incipient. No naturalist could tell how far this variation could be carried; but the great mass of them held that never by any amount of internal or external change, nor by the mixture of both, could the offspring of the same progenitor so far deviate from each other as to constitute different species. The function of the experimental philosopher is to combine the conditions of nature and to produce her results; and this was the method of Darwin.‡ He made himself acquainted with what could, without any manner of doubt, be done in the way of producing variation. He associated himself with pigeon-fanciers—bought,

begged, kept, and observed every breed that he could obtain. Though derived from a common stock, the diversities of these pigeons were such that "a score of them might be chosen which, if shown to an ornithologist, and he were told that they were wild birds, would certainly be ranked by him as well-defined species. The simple principle which guides the pigeon-fancier, as it does the cattle-breeder, is the selection of some variety that strikes his fancy, and the propagation of this variety by inheritance. With his eye still upon the particular appearance which he wishes to exaggerate, he selects it as it reappears in successive broods, and thus adds increment to increment until an astonishing amount of divergence from the parent type is effected. Man in this case does not produce the elements of the variation. He simply observes them, and by selection adds them together until the required result has been obtained. "No man," says Mr. Darwin, "would ever try to make a fantail till he saw a pigeon with a tail developed in some slight degree in an unusual manner, or a pouter until he saw a pigeon with a crop of unusual size." Thus nature gives the hint, man acts upon it, and by the law of inheritance exaggerates the deviation.

Having thus satisfied himself by indubitable facts that the organisation of an animal or of a plant (for precisely the same treatment applies to plants) is to some extent plastic, he passes from variation under domestication to variation under nature. Hitherto we have dealt with the adding together of small changes by the conscious selection of man. Can Nature thus select? Mr. Darwin's answer is, "Assuredly she can." The number of living things produced is far in excess of the number that can be supported; hence at some period or other of their lives there must be a struggle for existence; and what is the infallible result? If one organism were a perfect copy of the other in regard to strength, skill, and agility, external conditions would decide. But this is not the case. Here we have the fact of variety offering itself to nature, as in the former instance it offered itself to man; and those varieties which are least competent to cope with surrounding conditions will infallibly give way to those that are most competent. To use a familiar proverb, the weakest comes to the wall. But the triumphant fraction again breeds to overproduction, transmitting the qualities which secured its maintenance, but transmitting them in different degrees. The struggle for food again supervenes, and those to whom the favourable quality has been transmitted in excess will assuredly triumph. It is easy to see that we have here the addition of increments favourable to the individual still more rigorously carried out than in the case of domestication; for not only are unfavourable specimens not selected by nature, but they are destroyed. This is what Mr. Darwin calls "Natural Selection," which "acts by the preservation and accumulation of small inherited modifications, each profitable to the preserved being." With this idea he interpenetrates and leavens the vast store of facts that he and others have collected. We cannot, without shutting our eyes through fear or prejudice, fail to see that Darwin is here dealing, not with imaginary, but with true causes; nor can we fail to discern what vast modifications may be produced by natural selection in periods sufficiently long. Each individual increment may resemble what mathematicians call a "differential" (a quantity indefinitely small); but definite and great changes may obviously be produced by the integration of these infinitesimal quantities through practically infinite time.

If Darwin, like Bruno, rejects the notion of creative power acting after human fashion, it certainly is not because he is unacquainted with the numberless exquisite adaptations on which this notion of a supernatural artificer has been founded. His book is a repository of the most startling facts of this description. Take the marvellous observation which he cites from Dr. Crüger, where a bucket

* In 1855 Mr. Herbert Spencer (*Principles of Psychology*, 2nd edit. vol. i. p. 465) expressed "the belief that life under all its forms has arisen by an unbroken evolution, and through the instrumentality of what are called natural causes."

† The behaviour of Mr. Wallace in relation to this subject has been dignified in the highest degree.

‡ The first step only towards experimental demonstration has been taken. Experiments now begun might, a couple of centuries hence, furnish data of incalculable value, which ought to be supplied to the science of the future.

with an aperture, serving as a spout, is formed in an orchid. Bees visit the flower: in eager search of material for their combs they push each other into the bucket, the drenched ones escaping from their involuntary bath by the spout. Here they rub their backs against the viscid stigma of the flower and obtain glue; then against the pollen-masses, which are thus stuck to the back of the bee and carried away. "When the bee, thus provided, flies to another flower, or to the same flower a second time, and is pushed by its comrades into the bucket, and then crawls out by the passage, the pollen-mass upon its back necessarily comes first into contact with the viscid stigma," which takes up the pollen; and this is how that orchid is fertilised. Or take this other case of the *Catasetum*. "Bees visit these flowers in order to gnaw the labellum; on doing this they inevitably touch a long, tapering, sensitive projection. This, when touched, transmits a sensation or vibration to a certain membrane, which is instantly ruptured, setting free a spring, by which the pollen-mass is shot forth like an arrow in the right direction, and adheres by its viscid extremity to the back of the bee." In this way the fertilising pollen is spread abroad.

It is the mind thus stored with the choicest materials of the teleologist that rejects teleology, seeking to refer these wonders to natural causes. They illustrate, according to him, the method of nature, not the "technic" of a man-like Artificer. The beauty of flowers is due to natural selection. Those that distinguish themselves by vividly contrasting colours from the surrounding green leaves are most readily seen, most frequently visited by insects, most often fertilised, and hence most favoured by natural selection. Coloured berries also readily attract the attention of birds and beasts, which feed upon them, spread their manured seeds abroad, thus giving trees and shrubs possessing such berries a greater chance in the struggle for existence.

With profound analytic and synthetic skill, Mr. Darwin investigates the cell-making instinct of the hive-bee. His method of dealing with it is representative. He falls back from the more perfectly to the less perfectly developed instinct—from the hive-bee to the humble bee, which uses its own cocoon as a comb, and to classes of bees of intermediate skill, endeavouring to show how the passage might be gradually made from the lowest to the highest. The saving of wax is the most important point in the economy of bees. Twelve to fifteen pounds of dry sugar are said to be needed for the secretion of a single pound of wax. The quantities of nectar necessary for the wax must therefore be vast; and every improvement of constructive instinct which results in the saving of wax is a direct profit to the insect's life. The time that would otherwise be devoted to the making of wax is now devoted to the gathering and storing of honey for winter food. He passes from the humble bee with its rude cells, through the *Melipona* with its more artistic cells, to the hive-bee with its astonishing architecture. The bees place themselves at equal distances apart upon the wax, sweep and excavate equal spheres round the selected points. The spheres intersect, and the planes of intersection are built up with thin laminae. Hexagonal cells are thus formed. This mode of treating such questions is, as I have said, representative. He habitually retires from the more perfect and complex, to the less perfect and simple, and carries you with him through stages of *perfecting*, adds increment to increment of infinitesimal change, and in this way gradually breaks down your reluctance to admit that the exquisite climax of the whole could be a result of natural selection.

Mr. Darwin shirks no difficulty; and, saturated as the subject was with his own thought, he must have known, better than his critics, the weakness as well as the strength of his theory. This of course would be of little avail were his object a temporary dialectic victory instead of the estab-

lishment of a truth which he means to be everlasting. But he takes no pains to disguise the weakness he has discerned; nay, he takes every pains to bring it into the strongest light. His vast resources enable him to cope with objections started by himself and others, so as to leave the final impression upon the reader's mind that, if they be not completely answered, they certainly are not fatal. Their negative force being thus destroyed, you are free to be influenced by the vast positive mass of evidence he is able to bring before you. This largeness of knowledge and readiness of resource render Mr. Darwin the most terrible of antagonists. Accomplished naturalists have levelled heavy and sustained criticisms against him—not always with the view of fairly weighing his theory, but with the express intention of exposing its weak points only. This does not irritate him. He treats every objection with a soberness and thoroughness which even Bishop Butler might be proud to imitate, surrounding each fact with its appropriate detail, placing it in its proper relations, and usually giving it a significance which, as long as it was kept isolated, failed to appear. This is done without a trace of ill-temper. He moves over the subject with the passionless strength of a glacier; and the grinding of the rocks is not always without a counterpart in the logical pulverisation of the objector. But though in handling this mighty theme all passion has been stilled, there is an emotion of the intellect incident to the discernment of new truth which often colours and warms the pages of Mr. Darwin. His success has been great; and this implies not only the solidity of his work, but the preparedness of the public mind for such a revelation. On this head a remark of Agassiz impressed me more than any thing else. Sprung from a race of theologians, this celebrated man combated to the last the theory of natural selection. One of the many times I had the pleasure of meeting him in the United States was at Mr. Winthrop's beautiful residence at Brookline, near Boston. Rising from luncheon we all halted as if by a common impulse in front of a window, and continued there a discussion which had been started at table. The maple was in its autumn glory; and the exquisite beauty of the scene outside seemed, in my case, to interpenetrate without disturbance the intellectual action. Earnestly, almost sadly, Agassiz turned, and said to the gentlemen standing round, "I confess that I was not prepared to see this theory received as it has been by the best intellects of our time. Its success is greater than I could have thought possible."

In our day great generalisations have been reached. The theory of the origin of species is but one of them. Another, of still wider grasp and more radical significance, is the doctrine of the Conservation of Energy, the ultimate philosophical issues of which are as yet but dimly seen—that doctrine which "binds nature fast in fate" to an extent not hitherto recognised, exacting from every antecedent its equivalent consequent, from every consequent its equivalent antecedent, and bringing vital as well as physical phenomena under the dominion of that law of causal connexion which, as far as the human understanding has yet pierced, asserts itself everywhere in nature. Long in advance of all definite experiment upon the subject, the constancy and indestructibility of matter had been affirmed; and all subsequent experience justified the affirmation. Later researches extended the attribute of indestructibility to force. This idea, applied in the first instance to inorganic, rapidly embraced organic nature. The vegetable world, though drawing almost all its nutriment from invisible sources, was proved incompetent to generate anew either matter or force. Its matter is for the most part transmuted air; its force transformed solar force. The animal world was proved to be equally uncreative, all its motive energies being referred to the combustion of its food. The activity of each animal as a whole was proved to be the transferred

activities of its molecules. The muscles were shown to be stores of mechanical force, potential until unlocked by the nerves, and then resulting in muscular contractions. The speed at which messages fly to and fro along the nerves was determined, and found to be, not as had been previously supposed, equal to that of light or electricity, but less than the speed of a flying eagle.

This was the work of the physicist: then came the conquests of the comparative anatomist and physiologist, revealing the structure of every animal, and the function of every organ in the whole biological series, from the lowest zoophyte up to man. The nervous system had been made the object of profound and continued study, the wonderful and, at bottom, entirely mysterious, controlling power which it exercises over the whole organism, physical and mental, being recognised more and more. Thought could not be kept back from a subject so profoundly suggestive. Besides the physical life dealt with by Mr. Darwin, there is a psychical life presenting similar gradations, and asking equally for a solution. How are the different grades and orders of Mind to be accounted for? What is the principle of growth of that mysterious power which on our planet culminates in Reason? These are questions which, though not thrusting themselves so forcibly upon the attention of the general public, had not only occupied many reflecting minds, but had been formally broached by one of them before the *Origin of Species* appeared.

With the mass of materials furnished by the physicist and physiologist in his hands, Mr. Herbert Spencer, twenty years ago, sought to graft upon this basis a system of psychology; and two years ago a second and greatly amplified edition of his work appeared. Those who have occupied themselves with the beautiful experiments of Plateau will remember that when two spherules of olive-oil suspended in a mixture of alcohol and water of the same density as the oil, are brought together, they do not immediately unite. Something like a pellicle appears to be formed around the drops, the rupture of which is immediately followed by the coalescence of the globules into one. There are organisms whose vital actions are almost as purely physical as that of these drops of oil. They come into contact and fuse themselves thus together. From such organisms to others a stage higher, and from these to others a shade higher still, and on through an ever ascending series, Mr. Spencer conducts his argument. There are two obvious factors to be here taken into account—the creature and the medium in which it lives, or, as it is often expressed, the organism and its environment. Mr. Spencer's fundamental principle is, that between these two factors there is incessant interaction. The organism is played upon by the environment, and is modified to meet the requirements of the environment. Life he defines to be "a continuous adjustment of internal relations to external relations."

In the lowest organisms we have a kind of tactual sense diffused over the entire body; then, through impressions from without and their corresponding adjustments, special portions of the surface become more responsive to stimuli than others. The senses are nascent, the basis of all of them being that simple tactual sense which the sage Democritus recognised 2,300 years ago as their common progenitor. The action of light, in the first instance, appears to be a mere disturbance of the chemical processes in the animal organism, similar to that which occurs in the leaves of plants. By degrees the action becomes localised in a few pigment-cells, more sensitive to light than the surrounding tissue. The eye is here incipient. At first it is merely capable of revealing differences of light and shade produced by bodies close at hand. Followed as the interception of the light is in almost all cases by the contact of the closely adjacent opaque body, sight in this condition becomes a kind of "anticipatory touch."

The adjustment continues; a slight bulging out of the epidermis over the pigment-granules supervenes. A lens is incipient, and, through the operation of infinite adjustments, at length reaches the perfection that it displays in the hawk and eagle. So of the other senses; they are special differentiations of a tissue which was originally vaguely sensitive all over.

With the development of the senses the adjustments between the organism and its environment gradually extend in *space*, a multiplication of experiences and a corresponding modification of conduct being the result. The adjustments also extend in *time*, covering continually greater intervals. Along with this extension in space and time the adjustments also increase in speciality and complexity, passing through the various grades of brute life, and prolonging themselves into the domain of reason. Very striking are Mr. Spencer's remarks regarding the influence of the sense of touch upon the development of intelligence. This is, so to say, the mother-tongue of all the senses, into which they must be translated to be of service to the organism. Hence its importance. The parrot is the most intelligent of birds, and its tactual power is also greatest. From this sense it gets knowledge unattainable by birds which cannot employ their feet as hands. The elephant is the most sagacious of quadrupeds—its tactual range and skill, and the consequent multiplication of experiences, which it owes to its wonderfully adaptable trunk, being the basis of its sagacity. Feline animals, for a similar cause, are more sagacious than hoofed animals,—atonement being to some extent made, in the case of the horse, by the possession of sensitive prehensile lips. In the *Primates* the evolution of intellect and the evolution of tactual appendages go hand in hand. In the most intelligent anthropoid apes we find the tactual range and delicacy greatly augmented, new avenues of knowledge being thus opened to the animal. Man crowns the edifice here, not only in virtue of his own manipulatory power, but through the enormous extension of his range of experience, by the invention of instruments of precision, which serve as supplemental senses and supplemental limbs. The reciprocal action of these is finely described and illustrated. That chastened intellectual emotion to which I have referred in connexion with Mr. Darwin is, I should say, not absent in Mr. Spencer. His illustrations possess at times exceeding vividness and force; and from his style on such occasions it is to be inferred that the ganglia of this Apostle of the Understanding are sometimes the seat of a nascent poetic thrill.

It is a fact of supreme importance that actions the performance of which at first requires even painful effort and deliberation, may by habit be rendered automatic. Witness the slow learning of its letters by a child, and the subsequent facility of reading in a man, when each group of letters which forms a word is instantly, and without effort, fused to a single perception. Instance the billiard-player, whose muscles of hand and eye, when he reaches the perfection of his art, are unconsciously co-ordinated. Instance the musician, who, by practice, is enabled to fuse a multitude of arrangements, auditory, tactual and muscular, into a process of automatic manipulation. Combining such facts with the doctrine of hereditary transmission, we reach a theory of instinct. A chick, after coming out of the egg, balances itself correctly, runs about, picks up food, thus showing that it possesses a power of directing its movements to definite ends. How did the chick learn this very complex co-ordination of eye, muscles, and beak? It has not been individually taught; its personal experience is *nil*; but it has the benefit of ancestral experience. In its inherited organisation are registered all the powers which it displays at birth. So also as regards the instinct of the hive-bee, already referred to. The distance at which the insects stand apart when they sweep their hemispheres and build their cells is "organically remembered." Man also

carries with him the physical texture of his ancestry, as well as the inherited intellect bound up with it. The defects of intelligence during infancy and youth are probably less due to a lack of individual experience than to the fact that in early life the cerebral organisation is still incomplete. The period necessary for completion varies with the race, and with the individual. As a round shot outstrips a rifled one on quitting the muzzle of the gun, so the lower race in childhood may outstrip the higher. But the higher eventually overtakes the lower, and surpasses it in range. As regards individuals, we do not always find the precocity of youth prolonged to mental power in maturity; while the dullness of boyhood is sometimes strikingly contrasted with the intellectual energy of after years. Newton, when a boy, was weakly, and he showed no particular aptitude at school; but in his eighteenth year he went to Cambridge, and soon afterwards astonished his teachers by his power of dealing with geometrical problems. During his quiet youth his brain was slowly preparing itself to be the organ of those energies which he subsequently displayed.

By myriad blows (to use a Lucretian phrase) the image and superscription of the external world are stamped as states of consciousness upon the organism, the depth of the impression depending upon the number of the blows. When two or more phenomena occur in the environment invariably together, they are stamped to the same depth or to the same relief, and indissolubly connected. And here we come to the threshold of a great question. Seeing that he could in no way rid himself of the consciousness of Space and Time, Kant assumed them to be necessary "forms of thought," the moulds and shapes into which our intuitions are thrown, belonging to ourselves solely and without objective existence. With unexpected power and success Mr. Spencer brings the hereditary experience theory, as he holds it, to bear upon this question. "If there exist certain external relations which are experienced by all organisms at all instants of their waking lives—relations which are absolutely constant and universal—there will be established answering internal relations that are absolutely constant and universal. Such relations we have in those of Space and Time. As the substratum of all other relations of the Non-Ego, they must be responded to by conceptions that are the substrata of all other relations in the Ego. Being the constant and infinitely repeated elements of thought, they must become the automatic elements of thought—the elements of thought which it is impossible to get rid of—the 'forms of intuition.'"

Throughout this application and extension of the "Law of Inseparable Association," Mr. Spencer stands on totally different ground from Mr. John Stuart Mill, invoking the registered experiences of the race instead of the experiences of the individual. His overthrow of Mr. Mill's restriction of experience is, I think, complete. That restriction ignores the power of organising experience furnished at the outset to each individual; it ignores the different degrees of this power possessed by different races and by different individuals of the same race. Were there not in the human brain a potency antecedent to all experience, a dog or cat ought to be as capable of education as a man. These predetermined internal relations are independent of the experiences of the individual. The human brain is the "organised register of infinitely numerous experiences received during the evolution of life, or rather during the evolution of that series of organisms through which the human organism has been reached. The effects of the most uniform and frequent of these experiences have been successively bequeathed, principal and interest, and have slowly mounted to that high intelligence which lies latent in the brain of the infant. Thus it happens that the European inherits from twenty to thirty cubic inches more of

brain than the Papuan. Thus it happens that faculties, as of music, which scarcely exist in some inferior races, become congenital in superior ones. Thus it happens that out of savages unable to count up to the number of their fingers, and speaking a language containing only nouns and verbs, arise at length our Newtons and Shakespeares."

At the outset of this Address it was stated that physical theories which lie beyond experience are derived by a process of abstraction from experience. It is instructive to note from this point of view the successive introduction of new conceptions. The idea of the attraction of gravitation was preceded by the observation of the attraction of iron by a magnet, and of light bodies by rubbed amber. The polarity of magnetism and electricity appealed to the senses; and thus became the substratum of the conception that atoms and molecules are endowed with definite, attractive, and repellent poles, by the play of which definite forms of crystalline architecture are produced. Thus molecular force becomes structural. It required no great boldness of thought to extend its play into organic nature, and to recognise in molecular force the agency by which both plants and animals are built up. In this way out of experience arise conceptions which are wholly ultra-experiential.

The *origination* of life is a point lightly touched upon, if at all, by Mr. Darwin and Mr. Spencer. Diminishing gradually the number of progenitors, Mr. Darwin comes at length to one "primordial form;" but he does not say, as far as I remember, how he supposes this form to have been introduced. He quotes with satisfaction the words of a celebrated author and divine who had "gradually learnt to see that it is just as noble a conception of the Deity to believe He created a few original forms, capable of self-development into other and needful forms, as to believe that He required a fresh act of creation to supply the voids caused by the action of His laws." What Mr. Darwin thinks of this view of the introduction of life I do not know. Whether he does or does not introduce his "primordial form" by a creative act, I do not know. But the question will inevitably be asked, "How came the form there?" With regard to the diminution of the number of created forms, one does not see that much advantage is gained by it. The anthropomorphism, which it seemed the object of Mr. Darwin to set aside, is as firmly associated with the creation of a few forms as with the creation of a multitude. We need clearness and thoroughness here. Two courses and two only are possible. Either let us open our doors freely to the conception of creative acts, or abandoning them let us radically change our notions of Matter. If we look at matter as pictured by Democritus, and as defined for generations in our scientific text-books, the absolute impossibility of any form of life coming out of it would be sufficient to render any other hypothesis preferable; but the definitions of matter given in our text-books were intended to cover its purely physical and mechanical properties. And taught as we have been to regard these definitions as complete, we naturally and rightly reject the monstrous notion that out of *such* matter any form of life could possibly arise. But are the definitions complete? Everything depends on the answer to be given to this question. Trace the line of life backwards, and see it approaching more and more to what we call the purely physical condition. We reach at length those organisms which I have compared to drops of oil suspended in a mixture of alcohol and water. We reach the *protogenes* of Haeckel, in which we have "a type distinguishable from a fragment of albumen only by its finely granular character." Can we pause here? We break a magnet and find two poles in each of its fragments. We continue the process of breaking, but, however small the parts, each carries with it, though enfeebled, the polarity of the whole. And when we can break no longer, we prolong the intellectual vision to the polar

molecules. Are we not urged to do *something* similar in the case of life? Is there not a temptation to close to some extent with Lucretius, when he affirms that "Nature is seen to do all things spontaneously of herself without the meddling of the gods"? or with Bruno, when he declares that Matter is not "that mere empty capacity which philosophers have pictured her to be, but the universal mother who brings forth all things as the fruit of her own womb"? The questions here raised are inevitable. They are approaching us with accelerated speed, and it is not a matter of indifference whether they are introduced with reverence or with irreverence. Abandoning all disguise, the confession that I feel bound to make before you is that I prolong the vision backwards across the boundary of the experimental evidence, and discern in that Matter, which we in our ignorance, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the promise and potency of every form and quality of Life.

The "materialism" here enunciated may be different from what you suppose, and I therefore crave your gracious patience to the end. "The question of an external world," says Mr. J. S. Mill, "is the great battle-ground of metaphysics."* Mr. Mill himself reduces external phenomena to "possibilities of sensation." Kant, as we have seen, made time and space "forms" of our own intuitions. Fichte, having first by the inexorable logic of his understanding proved himself to be a mere link in that chain of eternal causation which holds so rigidly in nature, violently broke the chain by making nature, and "all that it inherit," an apparition of his own mind.† And it is by no means easy to combat such notions. For when I say I see you, and that I have not the least doubt about it, the reply is that what I am really conscious of is an affection of my own retina. And if I urge that I can check my sight of you by touching you, the retort would be that I am equally transgressing the limits of fact: for what I am really conscious of is, not that you are there, but that the nerves of my hand have undergone a change. All we hear, and see, and touch, and taste, and smell are, it would be urged, mere variations of our own condition, beyond which, even to the extent of a hair's breadth, we cannot go. That anything answering to our impressions exists outside of ourselves is not a *fact*, but an *inference*, to which all validity would be denied by an idealist like Berkeley, or by a sceptic like Hume. Mr. Spencer takes another line. With him, as with the uneducated man, there is no doubt or question as to the existence of an external world. But he differs from the uneducated, who think that the world really is what consciousness represents it to be. Our states of consciousness are mere *symbols* of an outside entity which produces them and determines the order of their succession, but the real nature of which we can never know. In fact the whole process of evolution is the manifestation of a Power absolutely inscrutable to the intellect of man. As little in our day as in the days of Job can man by searching find this Power out. Considered fundamentally, it is by the operation of an insoluble mystery that life is evolved, species differentiated, and mind unfolded from their prepotent elements in the immeasurable past. There is, you will observe, no very rank materialism here.

The strength of the doctrine of evolution consists, not in an experimental demonstration (for the subject is hardly accessible to this mode of proof), but in its general harmony with the method of nature as hitherto known. From contrast, moreover, it derives enormous relative strength. On the one side we have a theory (if it could with any propriety be so called) derived, as were the theories referred to at the beginning of this Address, not from the study of nature, but from the observation of men—a theory

which converts the Power whose garment is seen in the visible universe into an Artificer, fashioned after the human model, and acting by broken efforts as man is seen to act. On the other side we have the conception that all we see around us, and all we feel within us—the phenomena of physical nature as well as those of the human mind—have their unsearchable roots in a cosmical life, if I dare apply the term, an infinitesimal span of which only is offered to the investigation of man. And even this span is only knowable in part. We can trace the development of a nervous system, and correlate with it the parallel phenomena of sensation and thought. We see with undoubting certainty that they go hand in hand. But we try to soar in a vacuum the moment we seek to comprehend the connexion between them. An Archimedean fulcrum is here required which the human mind cannot command; and the effort to solve the problem, to borrow an illustration from an illustrious friend of mine, is like the effort of a man trying to lift himself by his own waistband. All that has been here said is to be taken in connexion with this fundamental truth. When "nascent senses" are spoken of, when "the differentiation of a tissue, at first vaguely sensitive all over," is spoken of, and when these processes are associated with "the modification of an organism by its environment," the same parallelism, without contact, or even approach to contact, is implied. There is no fusion possible between the two classes of facts—no motor energy in the intellect of man to carry it without logical rupture from the one to the other.

Further, the doctrine of evolution derives man, in his totality, from the interaction of organism and environment through countless ages past. The Human Understanding, for example—that faculty which Mr. Spencer has turned so skilfully round upon its own antecedents—is itself a result of the play between organism and environment through cosmic ranges of time. Never surely did prescription plead so irresistible a claim. But then it comes to pass that, over and above his understanding, there are many other things appertaining to man whose prescriptive rights are quite as strong as that of the understanding itself. It is a result, for example, of the play of organism and environment that sugar is sweet and that aloes are bitter, that the smell of henbane differs from the perfume of a rose. Such facts of consciousness (for which, by the way, no adequate reason has ever yet been rendered) are quite as old as the understanding itself; and many other things can boast an equally ancient origin. Mr. Spencer at one place refers to that most powerful of passions—the amatory passion—as one which, when it first occurs, is antecedent to all relative experience whatever; and we may pass its claim as being at least as ancient and as valid as that of the understanding itself. Then there are such things woven into the texture of man as the feeling of Awe, Reverence, Wonder—and not alone the sexual love just referred to, but the love of the beautiful, physical and moral, in Nature, Poetry, and Art. There is also that deep-set feeling which, since the earliest dawn of history, and probably for ages prior to all history, incorporated itself in the Religions of the world. You who have escaped from these religions into the high-and-dry light of the understanding may deride them; but in so doing you deride accidents of form merely, and fail to touch the immovable basis of the religious sentiment in the emotional nature of man. To yield this sentiment reasonable satisfaction is the problem of problems at the present hour. And grotesque in relation to scientific culture as many of the religions of the world have been and are—dangerous, nay, destructive, to the dearest privileges of freemen as some of them undoubtedly have been, and would, if they could, be again—it will be wise to recognise them as the forms of a force, mischievous, if permitted to intrude on the region of knowledge,

over which it holds no command, but capable of being guided by liberal thought to noble issues in the region of *emotion*, which is its proper sphere. It is vain to oppose this force with a view to its extirpation. What we should oppose, to the death if necessary, is every attempt to found upon this elemental bias of man's nature a system which should exercise despotic sway over his intellect. I do not fear any such consummation. Science has already to some extent leavened the world, and it will leaven it more and more. I should look upon the mild light of science breaking in upon the minds of the youth of Ireland, and strengthening gradually to the perfect day, as a surer check to any intellectual or spiritual tyranny which might threaten this island, than the laws of princes or the swords of emperors. Where is the cause of fear? We fought and won our battle even in the Middle Ages: why should we doubt the issue of a conflict now?

The impregnable position of science may be described in a few words. All religious theories, schemes, and systems, which embrace notions of cosmogony, or which otherwise reach into its domain, must, in so far as they do this, submit to the control of science, and relinquish all thought of controlling it. Acting otherwise proved disastrous in the past, and it is simply fatuous to-day. Every system which would escape the fate of an organism too rigid to adjust itself to its environment, must be plastic to the extent that the growth of knowledge demands. When this truth has been thoroughly taken in, rigidity will be relaxed, exclusiveness diminished, things now deemed essential will be dropped, and elements now rejected will be assimilated. The lifting of the life is the essential point; and as long as dogmatism, fanaticism, and intolerance are kept out, various modes of leverage may be employed to raise life to a higher level. Science itself not unfrequently derives motive power from an ultra-scientific source. Whewell speaks of enthusiasm of temper as a hindrance to science; but he means the enthusiasm of weak heads. There is a strong and resolute enthusiasm in which science finds an ally; and it is to the lowering of this fire, rather than to a diminution of intellectual insight, that the lessening productiveness of men of science in their mature years is to be ascribed. Mr. Buckle sought to detach intellectual achievement from moral force. He gravely erred; for without moral force to whip it into action, the achievements of the intellect would be poor indeed.

It has been said that science divorces itself from literature: the statement, like so many others, arises from lack of knowledge. A glance at the less technical writings of its leaders—of its Helmholtz, its Huxley, and its Du Bois-Reymond—would show what breadth of literary culture they command. Where among modern writers can you find their superiors in clearness and vigour of literary style? Science desires not isolation, but freely combines with every effort towards the bettering of man's estate. Single-handed, and supported not by outward sympathy, but by inward force, it has built at least one great wing of the many-mansioned home which man in his totality demands. And if rough walls and protruding rafter-ends indicate that on one side the edifice is incomplete, it is only by wise combination of the parts required with those already irrevocably built that we can hope for completeness. There is no necessary incongruity between what has been accomplished and what remains to be done. The moral glow of Socrates, which we all feel by ignition, has in it nothing incompatible with the physics of Anaxagoras which he so much scorned, but which he would hardly scorn to-day. And here I am reminded of one amongst us, hoary, but still strong, whose prophet-voice some thirty years ago, far more than any other of this age, unlocked whatever of life and nobleness lay latent in its most gifted minds—one fit to stand beside Socrates or the Maccabean Eleazar, and to dare and suffer all

* Examination of Hamilton, p. 154.

† Bestimmung des Menschen.

that they suffered and dared—fit, as he once said of Fichte, “to have been the teacher of the Stoa, and to have discoursed of beauty and virtue in the groves of Academe.” With a capacity to grasp physical principles which his friend Goethe did not possess, and which even total lack of exercise has not been able to reduce to atrophy, it is the world's loss that he, in the vigour of his years, did not open his mind and sympathies to science, and make its conclusions a portion of his message to mankind. Marvellously endowed as he was—equally equipped on the side of the Heart and of the Understanding—he might have done much towards teaching us how to reconcile the claims of both, and to enable them in coming times to dwell together in unity of spirit and in the bond of peace.

And now the end is come. With more time, or greater strength and knowledge, what has been here said might have been better said, while worthy matters here omitted might have received fit expression. But there would have been no material deviation from the views set forth. As regards myself, they are not the growth of a day; and as regards you, I thought you ought to know the environment which, with or without your consent, is rapidly surrounding you, and in relation to which some adjustment on your part may be necessary. A hint of Hamlet's, however, teaches us all how the troubles of common life may be ended; and it is perfectly possible for you and me to purchase intellectual peace at the price of intellectual death. The world is not without refuges of this description; nor is it wanting in persons who seek their shelter and try to persuade others to do the same. I would exhort you to refuse such shelter, and to scorn such base repose—to accept, if the choice be forced upon you, commotion before stagnation, the leap of the torrent before the stillness of the swamp. In the one there is at all events life and, therefore, hope; in the other none. I have touched on debatable questions, and led you over dangerous ground—and this partly with the view of telling you, and through you the world, that as regards these questions science claims unrestricted right of search. It is not to the point to say that the views of Lucretius and Bruno, of Darwin and Spencer, may be wrong. I concede the possibility, deeming it indeed certain that these views will undergo modification. But the point is, that, whether right or wrong, we claim the freedom to discuss them. The ground which they cover is scientific ground; and the right claimed is one made good through tribulation and anguish, inflicted and endured in darker times than ours, but resulting in the immortal victories which science has won for the human race. I would set forth equally the inexorable advance of man's understanding in the path of knowledge, and the unquenchable claims of his emotional nature which the understanding can never satisfy. The world embraces not only a Newton, but a Shakspeare—not only a Boyle, but a Raphael—not only a Kant, but a Beethoven—not only a Darwin, but a Carlyle. Not in each of these, but in all, is human nature whole. They are not opposed, but supplementary—not mutually exclusive, but reconcilable. And if, still unsatisfied, the human mind, with the yearning of a pilgrim for his distant home, will turn to the mystery from which it has emerged, seeking so to fashion it as to give unity to thought and faith—so long as this is done, not only without intolerance or bigotry of any kind, but with the enlightened recognition that ultimate fixity of conception is here unattainable, and that each succeeding age must be held free to fashion the mystery in accordance with its own needs—then, in opposition to all the restrictions of Materialism, I would affirm this to be a field for the noblest exercise of what, in contrast with the *knowing* faculties, may be called the *creative* faculties of man. Here, however, I must quit a theme too great for me to handle, but which will be handled by the loftiest minds ages after you and I, like

streaks of morning cloud, shall have melted into the infinite azure of the past.

GEOLOGICAL SECTION.

ADDRESS of the President, Professor Edward Hull, M.A., F.R.S., F.G.S.

Professor Hull commenced his address to the Geological Section (C) by a tribute to the services rendered to Geology by the late Professor Phillips; and then proceeded to discuss the volcanic phenomena of co. Antrim and the adjoining districts. His object was to present a connected history of the operations carried on by terrestrial agents in the island, from the commencement of the volcanic era to its close.

This era, though short as compared with the sum of geologic time, was in reality vastly extended, and comprised within its limits several stages or divisions characterised by special physical conditions. Speaking in geological terms, it probably included the latter part of the Eocene and the whole of the Miocene periods, interrupted by long pauses in the outburst of volcanic products.

But before entering upon the narrative of events which occupied this space of time, we should first endeavour to determine the physical limits of the theatre of these operations; for it may well be asked, considering the great extent to which the volcanic products have been cleared from off the surface of the country by denudation, with what degree of precision can we define the original limits of the volcanic area?

Let us for a moment, when replying to this question, turn to a more recent volcanic district for an illustration. When we ascend the cone of Vesuvius, and from that commanding station sweep with our eyes the surrounding region, we find ourselves in the centre of a plain—the Campagna of Naples—formed of the products of volcanic eruptions, but limited through three quarters of a circle by calcareous hills of older date, and along the other portion by the sea.

The original limits of the volcanic district of the north-east of Ireland may be laid down, and from some elevated stations rising from the central plateau of Antrim these limits may be almost described by the uprising of ridges of more ancient rocks in several directions. Taking our stand on Tardree Hill, or Sleamish, we see to the southward the granitic and schistose ridge of Slieve Croob, projected against a background of the mountains of Mourne, culminating in Slieve Donard. Westward the eye rests on the rugged masses of Slieve Gullion and the Silurian hills of Newtown Hamilton. Towards the north, after passing the depression of the southern shore of Lough Neagh and the valley of the river Blackwater, the enclosing ridge of old rocks, forming from this distance an apparently unbroken line, ranges northward into Donegal and the northern shores of Lough Foyle. The ocean now intervenes; but a comparison of the physical characters of the Donegal mountains with those of Islay, Jura, Cantyre, and the Western Highlands leaves the impression on my mind that the volcanic region of Antrim was limited northwards along the line of a submarine ridge, and that there is little reason for supposing that the volcanic rocks of Mull were superficially connected with those of this country,—on the contrary, the probability seems to be that the old crystalline rocks of the Western Highlands were interposed between the two regions.

Turning to the eastward, the sea overflows an area at one time occupied by volcanic products, but now only partially so, and we are unable strictly to define their easterly limits; but it is tolerably certain that the sheets of lava did not reach the shores of Galloway or those of the Isle of Man. Basaltic dykes, however, as is well known, traverse the north of England and the south of Scotland; but if referable, as Professor Geikie concludes, to the Miocene period, they

cannot be included in the volcanic region as here described and understood.

Thus the volcanic plateau of Antrim, like the Campagna of Naples, is washed on one side by the sea, and its limits become indefinable in consequence; but to the south, the west, and to some extent to the north, the limits of the region are marked out by mountains of considerable elevation. Within this region craters poured forth lavas or other volcanic products, which extended in great sheets until they were intercepted by the uprising of these natural barriers.

The floor of the area thus partially circumscribed was formed of various materials, as the accidents of denudation admitted. Over the central portions it was chiefly Cretaceous limestone (or Chalk), but to the southward it was New Red Sandstone and Lower Silurian, and to the north, Chalk, Lias, Carboniferous, and Lower Silurian beds in different directions. The whole region composed of rocks thus distributed was probably converted into dry land towards the close of the Eocene period—when, at various points, highly silicated felspathic lavas burst forth, consolidating into sheets of trachyte porphyry, rhyolite, and more rarely pitchstone, such as are found at Brown Dod Hill and Tardree near Antrim, and west of Hillsborough. These trachytic lavas were therefore the oldest of the volcanic eruptions of the north of Ireland, and seem to have been represented by the newer granitoid rocks recently described by Zirkel, Geikie, and Judd in the Island of Mull on the one hand, and by the trachytes of Mont Dore in Central France on the other. They have been described in this district by Berger and Bryce; but it is only recently that their relations to the other lavas have been clearly determined. In composition, both at Hillsborough and at Antrim, they present a felspathic base, enclosing crystals of sanidine (or glassy feldspar) and grains of quartz. At Brown Dod Hill they are disposed in sheets, showing lines of viscous flow and dipping beneath the overlying beds of basalt.

The outpouring of these trachytic lavas may, with every probability, be referred back to the later Eocene period. At any rate, a considerable interval probably elapsed before the eruption of the next series of lavas of Miocene age, which are essentially augitic, and may be comprehended under the heads of basalt and dolerite with their amygdaloidal varieties. Sheets of these lavas were formed, from various vents, over the uneven surface of the older rocks, and to a far greater extent, both as to area and thickness, than in the case of the preceding eruptions of trachyte. These beds, which are often vesicular, attain in some places a thickness of 600 feet, and are surmounted by decomposed lava and volcanic ashes, which mark the close of the second period of eruption.

The sheets of augitic lava which were poured forth during this stage are remarkable for their vesicular character and the numerous thin bands of red ochre (bole or laterite) which separate the different lava-flows, and which have been recognised by Sir C. Lyell as probably ancient soils formed by the decomposition of the beds of lava, similar to those in Madeira and the Canary Islands, resulting from streams of sub-aerial origin. Microscopic examination bears out this view; for a thin slice of one of the more compact beds of bole from the north coast showed that the felspar-prisms retained their form, while the augite and magnetite ingredients had passed into the state of an ochreous paste.

The vesicular and amygdaloidal character of these older beds of lava shows the probability that they have been poured forth under no greater pressure than that of the atmosphere, and, together with the evidence derived from the bands of ochre, leads to the conclusion that they have been erupted over land-surfaces. Some of the vents of eruption are now visible, either in the form of amorphous masses of trap protruded through the sheets, or of great funnels filled by bombs, broken

pieces of rock, and ashes, such as the rock on which is perched the venerable ruin of Dunluce Castle (the ancient stronghold of the MacDonnells), or the neck erupted through the Chalk in the coast-cliffs near Portrush. One of these old funnels was found by the late Mr. Du Noyer near this place: it forms a portion of the crest of the ridge overlooking Belfast Lough, to the east of Cave Hill.

The period of the formation of the older sheets appears to have been brought to a close by the discharge of volcanic ashes and the formation of an extensive lake, or series of lakes, over the region extending at least from the shores of Belfast Lough to the northern coast of Antrim, in which the remarkable beds of pisolitic iron ore were ultimately deposited. That water was present, and that the beds of ash which underlie the pisolitic ore were stratified, at least in some instances, is abundantly evident upon an examination of the sections at Ballypalidy, Ballymena, and the northern coast. In some places they are seen to be perfectly laminated in a manner that could only take place by the agency of water. It would seem, therefore, that by the combination of slight terrestrial movements a shallow basin was formed over the area indicated, which received the streams charged with iron in solution, draining the upland margins, from the waters of which was precipitated the iron, possibly by the agency of confervoid algae, or by the escape of carbonic acid, owing to which the iron became oxidised, and was precipitated.

Upon these uplands grew the plants whose remains occur amongst the ash-beds of Ballypalidy, the Causeway, and elsewhere, and which have enabled Mr. Baily to refer the strata in which they occur to the Miocene period. In some places the vegetation crept over the surface of the former lake-bottom as it became shallower or was drying up, and gave rise to beds of lignite similar to those described by the Duke of Argyll as occurring at intervals amongst the basalts of Mull. The beds of ore, wherever they are found, belong to one and the same geological horizon, and enable us to separate the basaltic series into two great divisions—one below and the other above the position of the pisolitic ore; and which, on maps of the Geological Survey, will for the future be represented by two different shades of colouring.

The ore itself is now laid open in numerous adits driven into the hill-sides, or in open works at Island Magee, Shane's Hill, Broughshane, Red Bay, Portfad, and other places, whence it is transported to the furnaces of Scotland, Cumberland, Lancashire, and Wales. A new source of industry and wealth is rapidly springing up over the already prosperous county of Antrim, and ere many years are over we may expect to see furnaces established at several points for smelting the ores at the mines from which they are extracted.

The period of volcanic inaction just described was brought to a close by fresh eruptions of augitic lavas, which spread in massive sheets over the beds of ore, bole, and even lignite, without materially altering their constitution. Thus on the north coast a band of lignite is interposed between the pisolitic ore below and a massive bed of columnar basalt above, which can be followed and identified by the size and regularity of its columns for several square miles over the district. That this molten rock has not utterly reduced the lignite to ashes, or even entirely obliterated the impressions of the plant-remains, has been doubtless due to the rapidity with which a hard crust, of low conducting-power, consolidates on the outside of a lava stream, as has been frequently observed on Vesuvius and other active volcanoes.

Above this peculiarly massive bed were piled fresh sheets of basalt and dolerite to a total depth of at least 400 feet, each flow of lava being consolidated in a somewhat different manner from those above and below it, and probably separated

from them by considerable intervals of time, as bands of ochre intervene in most instances between successive beds indicating subaerial soils of decomposed lava.

The maximum thickness of the basaltic sheets of Antrim has been estimated by Mr. Duffin and myself at 1,100 feet, to which must be added perhaps 200 feet for the subordinate trachytic beds, giving a total of 1,300 feet for the whole volcanic series. This is rather more than originally assigned by Dr. Berger, who places it at 900 feet, but it falls far short of the enormous accumulations of Mull, estimated by Professor Geikie at from 3,000 to 4,000 feet; in neither district, however, have we the data for determining the original thickness of volcanic *ejecta*, as in both large masses of material have been wasted away by denudation, and not a single volcanic cone or crater remains behind out of all those which, probably in numbers corresponding to those of Central France, were planted over the entire volcanic region.

The basaltic dykes which traverse not only the geological formations subordinate to the bedded traps, but also the latter themselves are, in some districts, both remarkable and exceedingly numerous. To the south of Belfast Lough we find at Scrabo Hill an outlying mass of bedded dolerite resting on New Red Sandstone, and far beyond the limits of the main masses which rise in a fine escarpment to the north of the Lough. There is every probability that Scrabo Hill is the site of a distinct focus of eruption; but it is also remarkable for the dykes of trap, as well as intrusive sheets, which have been squeezed in between the beds of sandstone themselves. Admirable and instructive sections are laid open in the freestone-quarries of this hill, which will amply repay a visit. Another district remarkable for such intrusions is that of Ballycastle, where dykes and sheets are seen traversing the Carboniferous rocks, as described by Sir R. Griffith in his admirable Report on the geology of that coal-field; while the well-known Giant's Causeway is itself a tessellated pavement of columnar basalt, traversing in the form of a dyke the horizontal sheets of older formation.

The intrusion of the thousands of dykes of the north-east of Ireland is unaccompanied by crumples or contortions of the strata; and if it were possible to place the dykes side by side, their aggregate breadth would cover a space several thousand feet in breadth. How, then, has this additional space amongst strata of given horizontal dimensions been obtained? Has it been by lateral tension outwards owing to inflation by means of elastic gases or vapours, or by a general bulging of the surface consequent on lateral pressure? The former view is stated by physicists to be untenable; the latter is one which will probably prove more consonant with modern views of terrestrial dynamics.

The results of the microscopic examination of a considerable number of specimens of augitic lavas from various parts of the volcanic district are of a generally uniform character. Whether we take specimens from the largely crystalline granular dolerites of Portrush or Fair Head, or the very dense micro-crystalline basalts of Shane's Castle, the structure and composition is found to be nearly uniform.

The lava is, with very few exceptions, an amorphous or subcrystalline paste of augite, enclosing long prisms or plates of labradorite feldspar, crystalline grains of titanite-ferite, and often of olivine. Chlorite is also sometimes present as a "secondary" mineral. It will be observed that this diagnosis differs essentially from that assigned by Dr. Zirkel as the normal structure of basalt, in which the base is "a glass," and the other minerals (the augite, feldspar, and olivine) are individually crystallised out. This, indeed, is the case with the Carboniferous melaphyres of the south of Ireland, and probably with all the rocks in which augite is deficient; but the basalts of Antrim contain augite so largely in excess of the feldspar that

it has, in nearly every case, formed the base of the rock.

The basalt itself is often so rich in iron as to become an impure iron-ore. This is owing to the presence of the metal in the form of minute grains of titaniferous iron-ore, which is the principal cause of the black appearance of the rock, and also as one of the components of the augite.

From the above general review of the volcanic history of Tertiary times in the north of Ireland it will be evident that it presents us with three distinct periods, similar to those which Mr. Judd had recognised in the succession of events in the Island of Mull:—

The earliest, possibly extending as far back as the later Eocene period, characterised by the trachytic lavas.

The middle, referable to the Miocene period, characterised by vesicular augitic lavas, tuffs, and plant-beds.

The latest, referable to a still later stage of the Miocene period, characterised by more solid sheets of basalt and numerous vertical dykes.

These three stages were probably separated from each other by long intervals of repose and the cessation of volcanic action. The succeeding Pliocene period seems to have been characterised by considerable terrestrial movements, resulting in the production of fractures in the earth's crust, and in the formation of that large depression which was filled with waters having a greater area than the Lough Neagh of the present day. Some of the faults which traverse the upper sheets of basalt, and are therefore of later date, have vertical dislocation amounting to 500 or 600 feet, as, for instance, that which runs along the valley under Shane's Hill near Larne. Such great fractures must necessarily have been accompanied by denudation, and it is probable that many of the present physical features had their origin at this (Pliocene) period. The extent to which the original plateau of volcanic rocks has been broken up and carried away within such comparatively recent times is vaster than is generally supposed. As there is evidence that the sheets of lava to the north of Belfast Lough were originally connected with those of Scrabo Hill to the south, we must suppose that this arm of the sea and the valley of the Lagan have been excavated since the Miocene period; while on the north-west the high elevation to which the escarpment of the basalt reaches, leads to the supposition that the basaltic sheets spread over the ground now occupied by Lough Foyle. Both along the west and along the eastern seaboard the sheets of lava are abruptly truncated and must have extended far beyond their present bounds; while many deep valleys, such as those of Glenarm, Cushendall, and Red Bay, have been excavated.

But the most remarkable result of the denudation, as bearing upon the subject before us, is the complete obliteration of the volcanic cones which we may well suppose studded the plateau. Some of these cones, at least, were contemporaneous with those now standing upon the granitic plateau of Central France, and which are but little altered in elevation since the fires which once burst forth from them became extinct. But since then the north of Ireland has been subjected to vicissitudes from which Central France has been exempted. The surface of the country has been overspread by the great ice-sheet of the earliest stage of the Glacial period, which appears to have stretched across from the Argyleshire Highlands, if we are to judge by the direction of the glacial *striae* at Fair Head.

At a later stage the country was submerged beneath the waters of the Interglacial sea which deposited the sands and gravels which overlie the Lower Boulder-clay; and subsequent emergences during the stage of the Upper Boulder-clay, together with atmospheric agencies constantly at work, whenever land has been exposed, have moulded the surface into the form we now behold.

It will thus be seen that the physical geologist,

whether a Vulcanist or a Neptunist, has in this region abundant materials on which to concentrate his attention.

Volcanic Energy.—In connection with this subject, the views of Mr. Robert Mallet may be cursorily referred to. Stated in a few words, volcanic energy, according to Mr. Mallet, has its origin primarily in the contraction of the earth's crust, due to secular cooling and the tendency of the interior molten matter to fall inwards and thus leave the exterior solid shell unsupported. The lateral pressure arising therefrom (which, as Mr. Mallet shows, is vastly greater than the vertical weight of the crust) is expended in crushing portions of the solid crust together, along lines of fracture which are supposed to correspond to those of the volcanic cones which are distributed over the earth's surface. Each successive crush produces an earthquake shock, and is converted into heat sufficient to melt the rocks which line the walls of the fissure or lie beneath at high temperatures, and which, in presence of elastic steam and gases, are erupted at intervals both of time and place.

In the words of the author of these views:—"The secular cooling of the globe is always going on, though in a very slowly descending ratio. Contraction is therefore constantly providing a store of energy to be expended in crushing parts of the crust, and through that providing for the volcanic heat. But the crushing itself does not take place with uniformity; it necessarily acts *per saltum* after accumulated pressure has reached the necessary amount at a given point, where some of the unequally pressed mass gives way, and is succeeded perhaps by a time of repose or by the transfer of the crushing action elsewhere to some weaker point."

It cannot be denied that Mr. Mallet's theory seems to be consistent with many observed facts connected with volcanic action. It has for its foundation an incontestable physical hypothesis, the secular cooling of the earth, and it seems to throw considerable light upon several observed phenomena of volcanic action—such as the distribution of cones and craters along great lines, the intermittent character of eruptions, and the connexion of earthquake shocks with volcanic outbursts. There are some statements in Mr. Mallet's paper which few physical geologists will be inclined to accept, such as the non-existence of true volcanoes before the Secondary or Mesozoic period. This statement, however, does not necessarily invalidate the general views of the author; and the lecturer held that the publication of Mr. Mallet's paper has enabled us to take a very long stride in the direction of a true theory of volcanic energy.

FINE ART.

THE PICTURE BY PIERO DELLA FRANCESCA.

THE picture by Piero della Francesca, lately added to our national collection, presents so many phases of interest that it may not be amiss to put our readers in possession of some authentic details respecting its history, and past and present condition. Furthermore, it becomes our duty to demonstrate the groundlessness of certain animadversions, marked rather by intemperance than good taste, which have been made upon this picture and its purchase for the nation.

This picture was an heirloom in the family, Marini-Franceschi, of Borgo San Sepolcro in Umbria, descendants of the painter; and had adorned the private chapel of a villa belonging to them, called La Montagna, in the neighbourhood of that town. Thence, many years ago, it was removed by the family to the town itself; and subsequently transferred to Florence to the care of Signor Frescobaldi, whose property it ultimately became. Its existence was first made known to the world at large in 1848, by the annotator of the Le Monnier edition of *Vasari*,

who, in enumerating some works by Piero, then as yet appertaining to his descendants, mentions this panel in the following terms:—

"Una tavola dove, con invenzione nuova, e con molto grazia di disegno, è rappresentata la Nascita del Redentore festeggiata dagli Angeli. La bellezza di questo dipinto fa maggiormente lamentare la perdita di freschezza e di trasparenza che ha patito il colore. Questa tavola si custodisce in Firenze presso il Sig. Cav. Frescobaldi." (*Vasari*, Ed. Le Monnier, vol. iv., p. 13, note.)

We may here remark that the picture bore, and still bears, evidence of having been left unfinished; and a family tradition connects this fact with the story told by Vasari, that the painter became blind comparatively early in life. This tradition must, however, be taken at its worth, and may be no more than a mythical explanation of the fact. Vasari's account of Piero's blindness is unsupported by any further evidence known.

In 1861, and while still in Signor Frescobaldi's hands, the picture was seen by the late Sir Charles Eastlake, then Director of the National Gallery, and so captivated him by its originality and innate beauty that he determined and agreed to purchase it, for himself at least, but in all probability with the ultimate intention of laying it before the Trustees of the National Gallery, should its condition bear the test of practical examination. At all events, this course would have been in accordance with the frequent practice of Sir Charles; a practice by which, in cases requiring immediate decision, but where either equivocal authenticity or doubtful condition could not be immediately submitted to proof, he sought to reconcile his intense love of art with the most high-minded and delicate sense of the duties of his office, and the interests of the Gallery. Whatever his intentions in this instance may have been, he believed he had secured the picture; and leaving it in Signor Frescobaldi's hands, went on a short excursion from Florence, but returned to find that it had in the interval been sold to Mr. Barker, and was already on its way to England. There is not the least reason to suppose that either Signor Frescobaldi or Mr. Barker acted unbecomingly in the case. The former may have misunderstood the first bargain, the latter may have been altogether ignorant of it. Fortunately for the interests of truth, Sir Charles, according to his custom, made a note of the condition of the picture when he saw it, which is preserved amongst his travelling notes, and we are enabled to present our readers with this memorandum, the dry statistical nature of which makes it all the more valuable as a record of facts. It is as follows:—

"Marini-Franceschi (descendants of Pietro della Francesca)—wood—split three times vertically and warped, about 4 ft. square, height about 4 ft. 2 in., width 4 ft. The Madonna kneeling, adoring the child on ground. The child not too small, and well drawn. Right, Joseph seated, with legs crossed, so as to show sole of one foot supported on left knee. He is seated on the saddle of the ass. Above Joseph are two figures (shepherds) standing. Left, five angels, standing, singing, and playing on guitars. Landscape left and right. Ruined cottage wall with roof on. Bird on it in centre. The landscape spotted (with ?) foliage blackened. The ox between the angels and the figures on right. The ass behind, braying in concert with the angels' song. Both animals well drawn. Either Pietro della Francesca or Fra Carnevale. The execution generally thinner than Pietro. The hair of one of the angels like corkscrews, like an early or young artist. Other parts finely drawn. Pen outline seen. The face of the Madonna longer than Pietro, and his peculiar mouth only to be traced in the shepherds."

The memorandum concludes with the quotation from the note in *Vasari* given above, and is dated "Florence, 1861." It will be observed that the writer makes no allusion to any serious damage beyond the splitting and warping of the panels—says nothing of a state of utter defacement which had destroyed the aesthetic beauty of the picture, or made any part of the composition, or even the

minute details, unintelligible. He describes the work indeed, with the exception of the splits and warp, as any one might describe it in its present state. Injured it was beyond doubt—but not very seriously, nor, to his experienced eye, "irretrievably." The warped and disunited panels might be rectified and reclosed; and when the surface should be cleansed of long-accumulating dirt, the picture would probably turn out to have suffered in no material point. But to anticipate this result required insight and knowledge, such as Sir Charles united with his deep appreciation of art. We have, moreover, reason to know that Sir Charles spoke of the picture with enthusiastic admiration, and never ceased to regret its having been lost to him.

Taken altogether, his estimate of it, the fact that he endeavoured to acquire it, whether for himself or the Gallery, and his valuable note, furnish evidence as to its condition at that time, differing essentially from the description elsewhere set before the public, in which it is represented as "The merest wreck and shadow of a picture—a thing of the past, ruined beyond all redemption," and again as

"Covered with successive coats of crude linseed oil, or perhaps even of olive oil. By these means in course of time a dense black or dark-brown crust was formed all over the battered surface, rendering the details all but invisible, and the panel was split up in more than one place from top to bottom. Wide fissures had opened in it, some of which had from time to time been rudely stopped up and painted over. Portions of the picture, again, when they became more than usually begrimed, had been coarsely cleaned, and all but scrubbed out by unskilful hands, the surface blistered, indented, abraded, and scratched—great patches had entirely scaled off, and heads and hands, draperies, &c., in some places had almost entirely perished. In short, no amount of legitimate restoration could have brought the picture to anything approaching its pristine aspect."

Without comment of ours, every candid mind will estimate the worth and appreciate the spirit of this minute description, volunteered as it confessedly is fifteen years after its author had seen the picture. We can only say it indicates the possession of a remarkably tenacious memory.

The public has further been informed that "it has long been a matter of notoriety" that the picture was sent by Mr. Barker for restoration in the first instance to a certain Signor Ugobaldi, in Florence, "who spent many weeks, if not months, of labour upon it." We believe we are perfectly safe in saying that no picture-restorer of that name either is, or was then known at Florence. And we know for a certainty that when Mr. Barker purchased the picture only a week or two after Sir Charles Eastlake had seen it, he caused it to be instantly packed up by Tanagli, and forwarded to London. There was therefore no time for either months or weeks of restoration upon it. For this fact, and many other details relating to this occasion, we have the word of the person who was with Mr. Barker when the purchase was effected, and who acted very much as his agent in the affair. He had known the picture for years, and his description of it as it then was, tallies precisely with that of Sir Charles Eastlake, save that he expressly says it was in "excellent condition," and that it was "as its author had left it, save that the panels had become separated, perhaps from having been originally badly mortised, and that the surface was dirty." He further mentions that part of the group to the right (Joseph and the shepherds) was unfinished. On being unpacked in London, the separated panels were placed in the hands of Mr. Morrill, in order that they might be straightened, joined, and the whole firmly parquetté at the back—processes which necessarily preceded any attempts at cleaning or restoration. Thus it will be seen from the foregoing, that the assertion or assumption as to the work having been restored at Florence falls to the ground.

So much for the history of this picture up to the period in 1862, when it was entrusted to Messrs. Bentley & Sons to be cleaned and restored.

The public has been led or left to suppose that the fact of Messrs. Bentley having repaired the surface injuries of the picture was either unknown to the authorities of the National Gallery previous to the sale, or, being known, was kept a profound secret. Such is not the case. Long before the picture came to the sale-room it had been, of course, carefully examined, and the extent of the restoration made by Messrs. Bentley fully ascertained. As to the repairs and restorations really made, these are so clearly stamped upon the picture that they may be distinguished even by a not very experienced eye. We have said that the four vertical panels had been disunited, causing three separations in the entire. Of course, even the most skilfully effected closure would still leave a mark as of a crack where the junction had taken place. Part of the process of repairing would therefore consist in stopping up the crack, and should its edges have escaped fraying, that operation might be performed so neatly as to leave no more than a fine thread-like white line, level with the general surface, in place of the dark one caused by the fissure. This white line would then have to be tinted to match the varying tones of colour in its neighbourhood; by which the eyesore would be removed, and the real integrity of the picture left unimpaired. In the case of the picture now under consideration, these restorations have been very frankly made, and are perfectly visible. No attempt has been made to conceal them further than was needed to prevent their striking the eye as patches. Happily the injuries which the surface had otherwise undergone were almost exclusively confined to parts of the composition outside the range of the figures. The upper portion of the sky, near the edges of the picture, had suffered most, several bits having scaled off here and there. The same had taken place at the foot of the picture, chiefly on the right hand side, where the brown tint of the ground had been much abraded. Two or three small bits had likewise scaled off from the blue robe of the Madonna; otherwise the figures had escaped damage to a remarkable extent. The head of St. Joseph has, however, been very needlessly stippled over. It is stated by a gentleman at Florence, to whom we have above referred, to have been originally only *sketched in* (*accennata*), by the master himself. The figures of the shepherds, too, appear to have been scarcely more than outlined on the brown preparation: and although but little has been done to "help" them, yet even that little had been better left undone. With almost these exceptions the picture remains intact to a surprising extent, especially considering its antiquity, and the trying conditions to which it must have been long exposed. The ancient surface will be found to predominate all through, and the restorations to be limited almost entirely (with the single exception of the head of Joseph) to the less important parts of the picture as a whole, and to the less essential portion of the groups. A comparison of this remarkable work with the well-preserved "Enthroned Madonna with Angels," in the possession of Mr. Alfred Seymour, shows many interesting points of resemblance between both pictures. In the heads of the angels in both, we find the same type, and very much the same method of handling to prevail. We see the same rather small eyes—the rounded face—the somewhat thick nose—peculiarities also traceable in the "Baptism" of our National Gallery. The treatment of the hair is also very similar in the two former works, and the angels in all three wear their tunics kilted up by a second belt, like men girded for travel, so that the feet and ankles are fully seen. This is highly characteristic of Piero, who loved the mustering of many feet in his compositions. It enabled him to give to his figures that just balance and firm stand which invests

them with a peculiar charm. It can scarcely be doubted that Signorelli inherited the same idiosyncrasy from his master, Piero. The jewelled neckbands of the angels, and the embroidered hems of their garments are all but identical in Mr. Seymour's picture and in ours.

Nothing can be more beautiful than the conception of this "Presepio," unlike any other known to us in the serried band of angels which forms its most striking feature. Wingless, as if appointed guardians of man upon earth, they seem to have travelled over the distant mountain tops, and along the winding road that leads to the lonely manger, to exult in the long-expected moment, and render homage to the infant Redeemer of the world. The rude shepherds stand by, awed and respectful. Joseph, a grave, patriarchal figure, finely conceived, sits there in patient trustfulness. The kneeling Mary, in calm prayer—not astonished, but absorbed in the one great thought that the promise is fulfilled—forgets all earthly cares, and sees not her lowly and sad surroundings. The unaffected and manly naturalism of the whole has its counterpart only in some of the finer Athenian reliefs. The instinct of composition, transcending all that schools can teach, is here triumphant. None but a master may dare such simplicity.

We think we have here adduced ample proof to satisfy any unprejudiced judgment: 1st. That this picture never could have been at any period in a state of hopeless ruin, nor even *apparently* in a condition which could have justified an assertion to that effect; 2ndly. That it was most certainly neither cleaned nor in any way repaired before it reached England; and 3rdly. That the restorations made upon it in this country are very limited in extent, are chiefly confined to the less important and less interesting parts of the picture, and that the present surface of the greater part of it is *bona fide* the work of the master.

EDITOR.

COMPETITIONS FOR THE PRIX DE ROME.

Paris: Aug. 10, 1874.

THE rooms of the Ecole des Beaux-Arts have been filled during the past week with successive exhibitions to compete for the prizes offered by the Academy of Rome. Formerly the successful works were included in the same exhibition as those sent from Rome by the students of the Villa Medici. But as the exhibition of the latter had already been open to the public a few weeks ago, the authorities thought that they might abandon a custom which gave an opportunity to critics of making comparisons between the relative merits of the different studies in painting, sculpture, architecture, and engraving. It is impossible to understand the system now pursued by the Administration of the Ecole des Beaux-Arts. At times it seems more liberal than any that have preceded it, as, for instance, when it gave our artists the means of becoming pretty nearly independent by setting up for themselves a vast association, under the name of "The National Academy of French Artists." Sometimes it makes friends with the Institute—practically giving up the direction of modern art to that body by the mode of electing the jury for the annual exhibition called the Salon. At other times it encourages the public to find their way to the Ecole by allowing the official apartments of the establishment to be used for private exhibitions, such as those of the works of Prud'hon and Chintreuil. And then again it seems to distrust the judgment of the very same public by refusing the opportunity for those general discussions on the principles of art which recur annually in the public press,—and which in no way threaten the safety of the Ecole.

The studies of line-engraving were so indifferent that the jury did not venture on awarding the grand prize. They gave instead two second

prizes, which do not carry with them the privilege of residence in Rome. This seems to have been an act of courtesy towards the teachers of these feeble pupils—MM. Henricque and Dupont. In like manner one sees religions with their altars deserted, although the priests continue to instruct disciples and to receive homage. It is long before public opinion succeeds in overthrowing these conventionalities. These phantoms, illuminated by past triumphs and good deeds, vanish slowly under the influence of poverty, neglect and indifference. But there comes a moment when nothing can resist the force of new ideas. Line-engraving did not long survive the school of the eighteenth century. The burin, after having exhausted all that science, grace, and feeling could do in rendering the works of Watteau, Boucher, Chardin, Grenze, Teniers and Joseph Vernet, in white, black and grey, grew cold in the hand of the German Wille, and presently pedantic in that of Desnoyers. In our day it has to struggle against the increasing inroads of photography and the fashion of etching. It is dying without much present glory and without having been of much real utility in art. It was doing no good to anything except what Academicians call high art (*peinture de style*).

The existence of this style of painting (I mean as it is taught in our Academy) is itself in great danger. In vain do the doctors meet together and propose remedies and publish codes which they call grammars of the art of painting. In vain are comforting and restoring potions administered under the form of official compliments in public, of articles in orthodox reviews, of orders for pictures, of new prizes—such as that prize of the Salon which, although refused by the jury, was awarded by the minister—of medals and crosses. In vain are all who refuse to bow down before this old tragedy queen treated as noxious charlatans. The patient grows weaker and more tremulous every day. A young painter—Régnauld—who was killed at the last sortie of the besieged in Paris under the wall of the park of Buzenval, struck her a terrible blow. He was a student of the Ecole des Beaux-Arts, a circumstance as natural as it was creditable. But no sooner had he reached Rome than he felt burning within him the fire of genius, and he did not attempt to hide it. In his letters, which were published by Charpentier after his decease, he tells us how cold and dead Rome appeared to him, how heavy and pedantic her school of art. It was a purely personal opinion; but at any rate, it had the merit of truth and originality. Although so independent in his opinions, Régnauld had a great respect for the old masters and a real love of nature. At that time the students of the Villa Medici were not forced to spend more than the first year in Rome: at the end of that time they might choose any country they liked for the remainder of their term of three years. Régnauld fixed upon Spain. First Velasquez and then Goya afforded him those subjects of reflection which other minds gather from Raphael or Michael Angelo. The Alhambra intoxicated him as much as the Vatican inspires others. Morocco was his Campagna. He died very early, and neither the beauties nor the faults displayed in his works, which as yet could be considered only as full of promise, should be exaggerated. But he undoubtedly had emancipated himself from the dogmatism of the Academy, and thus obtained room for originality. It is impossible to say whether he could have established a school of his own—whether he was endowed by nature for a part which requires qualities of a rare kind, such as distinguished David or Eugène Delacroix. Still his name may be used as a brilliant argument against those Academicians who assume as a motto for their haughty manifestoes "No salvation out of the School."

Unfortunately for the Academy he manifested symptoms of insubordination as a colourist. Colour, that subtle and all-absorbing impression,

accords ill with an education received in the dim light of a studio, with a common-place model under restrictions which banish all freedom of arrangement, costume, movement, or passion. We no longer possess the austerity of the treatment of Ingres, nor have we in exchange the liberty imperatively demanded by a young, fresh, first-hand manifestation. An original pupil is only a rebel. Thus the exhibitions lose all their interest.

This last was extremely feeble. We can predict nothing of the future career of a student starting for Rome, except that he will return in four years to swell the ranks of the respectable but mediocre phalanx of artists on whom the State has bestowed a fatal gift by morally binding them by an engagement which it is materially impossible to keep. The whole revenue of the Academy will soon be insufficient to support the men who come back full of illusions and self-conceit, who, at thirty-five years of age, have not yet been exposed to the struggles of life, and who, by devoting themselves to high art, are excluded from the art proper to their own time and country.

I have somewhat exaggerated the dark shades in my picture. The Roman school in the present day is a powerful association of moral and material interests. Its members—both painters and musicians—support one another, and arrange a sort of royal road to lucrative appointments, and especially to the chairs of the Institute. The sculptors are more modest, and lead more solitary and studious lives. The engravers go for nothing, and get on as well as they can. The architects are the providence of the Academy. They stow its abortive talents in quiet but snug places such as those of superintendents of public works. When they obtain important commissions for civil or religious edifices they invariably have recourse to the pencil or chisel of their old fellow students. The new Opera House built by M. Garnier has proved how binding must be the oath administered in this society which seems to have taken for its secret motto "Help thyself, and the School will help thee." All the old members have received the best pieces, the staircases, the ceilings, the fireplaces, &c. Other painters and sculptors have been pitilessly sent away, or have obtained only some crumbs from the copious banquet of which the administration has the disposal. This instance proves architecture to be the corner stone of art.

The subject set for the students was a College of theology, law and science. The designs were remarkable. The art of washes is much cultivated, that is, of putting in neatly the broad tints which indicate the differences of ground or construction, and of the decorations, ornaments, statues, frescoes, &c. In this way are formed students capable of representing on paper the ambitions and vague ideas of those ministers or students who are desirous of leaving in one of our public buildings some trace of their tenure of power. As to the material conditions of execution, the practical convenience of the offices, the cost, the choice of materials afforded by the soil—all these conditions under which alone a perfect edifice can spring from the bowels of the earth and the brain of man—these considerations are too prosaic and vulgar for young geniuses who are going off to Rome to study the restoration of ruins.

There is a gap in the subjects taught by the Academy—the annual composition of a tragedy in accordance with the law of the three unities.

In these halls, however, into which so little of the atmosphere of the present day is admitted—which are more jealous of their privileges than the Pope of his temporal power, which are hostile to all reform, and, yet, since the death of Ingres have been without a guide or a creed—there has appeared this year a work full of freshness and originality.

This phenomenon exhibited itself in the sculpture section.

Still more surprising and extraordinary is the fact that a work of so much simplicity and imagination should actually have obtained the first prize, and that it was awarded unanimously.

The students in sculpture had received as a subject "The Grief of Orpheus." As usual, ten of them entered themselves for the prize. Some represented Orpheus tearing his hair out by handfuls; others, Orpheus suffering severely from colic; others, again, a tipsy Orpheus, looking as if he had just returned drunk from some dancing hall. In short, without pausing to describe designs which in general were carefully executed, there were two students who far surpassed the rest—M. Guilbert and M. Injalbert.

M. Guilbert is an excellent pupil—the type of a model pupil. He recollected that a sculptor much esteemed by his masters—M. Perraud—once upon a time personified the exhaustion which follows a great crisis by the figure of a man seated with a bent back, extended legs, drooping head, hands clasped over the knees, and hair covering the forehead. He remembered all this too well, and it is thus that he has represented his Orpheus. It had no other distinctive sign than a lyre raised from the ground and resting between the legs. It would have been an appropriate figure for a musician who has just failed in a competition of playing on the lyre. He has cast his instrument on the ground, remembering with rage the false notes awakened by his touch; still hearing the echo of the derisive shouts which follow his defeat, and swearing never to play a single note again.

But Orpheus is much more than this. He is a touching figure—conqueror of the infernal powers as an artist, and conquered in turn by the recklessness of love, as a husband. He has descended into the shades, he has passed through ranks of horrible monsters, he has heard the threefold bark of Cerberus and the cries of the angry, jealous, and terrified dead. He has seen Eurydice again. He has tuned his lyre before the throne of the implacable divinities, and drawn from its chords sounds so full of feeling, passion, grief, and eloquence, that the gods have broken their oath and given back to him the being who was the soul of his music and the eloquence of his words. He sets off on his return; soon he will reach the light once more; but the darkness is horrible to him in his state of nervous tension. The silence terrifies him. Is it indeed true that Eurydice is following? Perhaps the gods have deceived him. He turns and sees her shade rapidly fading away into nothingness.

It is an exquisitely tender story. M. Injalbert has fixed the moments following the catastrophe with extraordinary felicity. Orpheus, a slender and manly figure, suitable to the character of a young husband, is standing with his back against a tree. The wind from the mouth of the cavern swells and blows back the skirt of his short cloak. His left arm hangs down and supports mechanically the lyre which will be always dear to him. His head is slightly bent, and his contracted lips seem to quiver with the sob which precedes an outburst of tears. His right arm is stretched out as if he hoped to clasp once more the vain shadow which has disappeared into eternal darkness.

The execution of this statue is delicate and flowing. The head was broken on the day before the exhibition, and M. Injalbert was obliged to restore it in a hurry. It is wanting, therefore, in clearness, but it is sketched with a boldness which gives a complete idea of its effect when finished. There is a languor in the expression which renders admirably the idea of a highly impressionable imagination, shaken by a sharp blow to the very centre; but there is nothing effeminate about it. It reminds one of a dove which has lost its mate. One day a friend of mine shot a gull in a river before my eyes. The male bird came, and for nearly a quarter of an hour stroked the floating body of his mate with his wings. We were much touched by the sight, and the other day meeting by a

strange chance in front of the Orpheus of M. Injalbert, we exchanged a look of intelligence.

The extension of the right arm has been criticised not as a defect in composition, but because of the fragility of such a projection. But this criticism cannot be maintained in consideration of the true feeling indicated by this gesture which so evidently invokes the absent figure of Eurydice. It is a touch of invention rarely found in sculpture which cannot command the charm of colour or the effect of light.

The sentiment of this figure belongs to the Romantic School; the modelling, the delicacy of the joints and the style class it with our great school of sculpture established in the eighteenth century. This school has always preserved its superiority. It constantly renewed its youth in the study of nature. It never made to fashion, to the Academy, or to local authorities, any of those shameful concessions which dishonour art and discredit artists. It has never rejected those masters of their art who, like Rude or David of Angers have drawn their inspiration not only from ancient history or worn-out mythology, but from the history and philosophy of their own time. We hope that M. Injalbert possesses strength of mind equal to his talents, and courage sufficient to carry out the promise of his Orpheus. We trust that he will come back from Rome the same man as he now is—a French artist.

M. Injalbert has been a pupil in the atelier of M. Dumont. He was born at Béziers, in the department of L'Hérault. He was a great favourite with his companions, who loudly applauded his triumph. The inhabitants of his department have opened a subscription to give him a medal and the municipal council of his native town heads the list with a donation of 500 francs.

PH. BURTY.

The following is an exact list of the prizemen: May we welcome the names of these young men at next year's Salon—the real field of battle.

Engraving: No grand prize; first prize, M. Boisson; second prize, M. Deblouis.

Architecture: Grand prize, M. Loviot; first second-grand prize, M. Pamart; third second-grand prize, M. Paulin. A good exhibition.

Painting: The subject taken from Plutarch, the *Death of the Tyrant Timophanes* seemed very revolutionary, considering the reactionary opinions declared against all allusions to liberty. Grand prize: M. Albert Besnard, pupil of M. Cabanel, he is only 25 years old and has competed for the first time. He received a medal at the last exhibition for a bold decorative painting—*Autumn*—and for the portrait of a young girl, who was no other than Mlle. de Rochefort. First second-grand prize, M. Cornere. M. E. Dantan, who also received a medal at the "Salon" for a *Monk cutting a Figure of Christ in Wood*, was honourably mentioned.

Sculpture: M. J. A. Injalbert; First second-grand prize, M. Guilbert; second second-grand prize, M. Marie. Most of the works exhibited were remarkable, those of the successful competitors excellent.

THE EXCAVATIONS AT OLYMPIA.

THE success of the Bulgarian Ministry during the late elections in Greece will, we hope, put an end to all uncertainty with regard to the ratification of a treaty concluded last April between the Greek and German Governments, relative to the excavations at Olympia. It is but natural that the Hellenic Government should always have felt disinclined to allow foreigners to draw on the art treasures which lie hidden beneath the soil of Greece. But the offer made by the German Government differs materially from all others. It comes directly from the Crown Prince of Prussia, who is the official protector of all public museums in Prussia, and who, as is well known, is the worthy pupil of Professor Ernest Curtius. These two men took up the plan which had been

entertained by the French Government in 1829, had been revived by King Frederick William IV., and been urged on the public again by Professor Ross in 1853;—which had in fact been the desire of all archaeologists during the last fifty years, viz., to lay open systematically and methodically the ruins of Olympia. Their object in making the proposal to the Greek Government is not to acquire for German museums any of the treasures that may come to light. On the contrary, the German Government, though defraying all the expenses, renounces all claims to the possession of any of the antiquities that may be discovered. They will all remain in Greece, the property of the Greek nation. All that Germany asks for, is to be allowed to excavate, to have for five years the exclusive right of making casts, and for ten years the right of publishing reports of the excavations. A treaty to that effect was signed on April 25, by the Bulgarian Ministry on one side, and Professor E. Curtius on the other. One paragraph was added by the Greek Government: "Il dépendra de la propre volonté du Gouvernement Grec de céder à l'Allemagne, en souvenir et en considération des sacrifices que l'Allemagne s'imposera pour cette entreprise, des doubles ou des répétitions des objets d'art trouvés en faisant les fouilles." Unfortunately the Chambers were dissolved before they had ratified the treaty. It will have to be submitted to the newly-elected Chamber, and we hope we shall soon hear of the beginning of the great work. No one is better qualified to conduct and superintend these operations than Professor Curtius. "It is not idle curiosity," he writes in his paper on Olympia, "that is to be gratified; no dilettante whim, no display of wealth that prompts our enterprise; it is a duty for all of us to do all we can, in order to take full possession of the inheritance left to us by antiquity, and not to be satisfied with what is lying on the surface, or brought to light by casual efforts." MAX MÜLLER.

NOTES AND NEWS.

WE do not know whether the directors of public galleries in Europe have at any time had their attention called to a source of possible acquisitions which is suggested in a letter addressed to us by a well-informed correspondent at Valparaiso. Our correspondent points out how "200 years ago, when the mines of Potosi were perhaps the most important in the world, the neighbouring city of Chuquisaca (now Sucre), the capital of Alto Peru (now Bolivia), abounded in wealthy families, many of them noble in the old country, who spent part of the wealth acquired in mining enterprise on objects of art for their own gratification, for the enrichment of the churches of the colony, or for the adorning of their private chapels or oratories. Many of these paintings have been taken in recent times to Lima, to Chili, and even to Europe; more have disappeared, or have been destroyed in the revolutions that for so many years have ravaged Bolivia. Some have been found in the hovels of Indians, and in low drinking-shops, and a diligent search might bring to light many gems of Spanish and Flemish art.

"A friend in Santiago de Chili writes me to the following effect:—

"There exists in Santiago a Virgin which, in the opinion of all the painters [of that city], is an original Rubens. It was taken [estruido] from a European gallery to which it belonged in the last century; it has been copied by an ancient [for Chili] painter, whose descendants exist in Santiago, and retain a copy of that period [end of eighteenth century or beginning of nineteenth]. It is a Virgin of life-size, rather more than bust, caressing the Infant, who stands upright in the attitude of turning from the spectator, and hiding himself in the bosom of the mother. The Infant is very beautiful, and is notable for the flesh-colour."

Still more important than the picture above cited, appears to be another ascribed to Murillo, and now in the possession of Herr Ernest Rück, of Sucre. Our correspondent has been good enough to forward us two photographs of this latter work, from which it is apparent that it is a

good work of the Spanish school of the seventeenth century. The subject is the *Vision of San Cayetano*, and the owner supplies the following account of its authorship and provenance:—

"Painted in oil, on a copper plate, by Bartolomé Estevan Murillo in Madrid, about the years 1643 to 1645. The picture, perfectly preserved, measures 48 centimètres in height by 38 centimètres wide. It was the property of the Cathedral of Charcas in the Department of La Plata [Bolivia]. It is in a frame of varnished oak, and was covered with a Venetian mirror-glass. The painting, after having been presented to the Cathedral by one of the former Archbishops, was given by the Metropolitan Council to the Ecclesiastic Governor, Senor Fernandez. After his death it passed through various hands into those of its present proprietor."

MR. ARTHUR HILL, B.E., has published by subscription his excellent monograph of the ancient chapel at Cashel, for which he received a silver medal from the Institute of Architects, a short time ago. The Cormac chapel, which was built as early as 1127, is especially interesting, as affording an instance of the early growth of Gothic architecture, for although it is distinctly Romanesque in character, we can yet trace in it many indications of the pointed style that was so soon to be developed and flower in luxuriant beauty. In this remarkable chapel the Gothic plant is still struggling for life. Mr. Hill's folio is illustrated by careful drawings, showing the chapel as it formerly existed, and also by two large photographic views of it in its present state, taken by Mr. Hudson of Killarney. Such a work is of great value as preserving a record of a building of great historic, as well as architectural interest.

WHEN questioned as to the non-appointment by the Board of Public Works of a competent person to superintend the works of conservation of the national monuments of Ireland, the Irish Secretary stated that no such inspector is needed, as the Board does not intend to "restore" any of the ecclesiastical remains vested in them. Mr. Graves, however, the learned Secretary of the Historical and Archaeological Association of Ireland, writes to the *Dublin Evening Express*:—

"I visited Cashel, the only building as yet actually vested in the Board, in the middle of last June, and found a very intelligent clerk of works, and a large staff of operatives, in possession of 'the Rock.' Mr. Reade, the clerk of works, kindly gave me every information as to the proposed operations, and I found that besides the works of simple conservation it was intended to restore—

- "1. The bishop's palace or castle.
- "2. The vicar's hall.
- "3. The east window of the cathedral.
- "4. The buttresses of the cathedral.
- "5. The battlements of the cathedral.
- "6. The enclosing wall of the Rock."

In a subsequent letter, Mr. Graves concludes from an answer of Lord Beauchamp to Lord Carlisle, that

"all idea of restoration at Cashel has been abandoned, and that the works there (except in the case of the enclosing wall, which certainly ought to be crenelated in the Irish style, and thus rendered as little like a prison wall as possible), will be confined to what is required for the efficient preservation of the existing remains."

He also comments on a "perfectly astounding" sentence of Lord Beauchamp's reply, which is to the effect that "the work of preservation would be better discharged by a surveyor than by a person possessed of archaeological tastes and knowledge!" It should be remembered that the ancient churches and round towers of Ireland are unique, and are of a type entirely different from that presented by English or continental remains of the same age. English archaeologists are such sufferers from official ignorance and incapacity at home, that they have no difficulty in sympathising with those of Ireland in their wish to preserve the distinctive features and character of the national monuments which time has left.

GUILDHALL, it may be supposed, will soon bloom forth in great splendour, for at a meeting held a short time since; it was resolved on the motion of Mr. James Edmeston, that an architect should be instructed

"to prepare and submit for the approval of the Court, a complete design for the polychromatic decoration of one bay of the wall-surface and roof of the Guildhall, drawn to a large scale, so that the decoration done from time to time, when the hall is prepared for great occasions, should be part of a well-considered whole, and not, as at present, a fragmentary effort."

We must confess that there are few architects at the present time to whom we should like to entrust the "polychromatic decoration" of this old civic hall.

THE writer of an article on "A Lost Art" in *Scribner's Monthly* for August wishes to convince us that the curvature observed in the horizontal lines of the Parthenon at Athens, and elaborately examined by Mr. Penrose, with the result of showing that it was intended to correct optical effects, was in reality intended to produce optical effects. The writer in question had got upon this track by noticing the well-known obliquity of lines in the Cathedral of Pisa, an obliquity which he is doubtless quite right in tracing, not to a sinking of the parts of the building, but to the original design of the architect. But when he says that the spirit which prompted this obliquity of design among the early architects of Italy had been handed down from the Greek masters, on no other grounds than that the Cathedral of Pisa was the work of Byzantine architects, and that a slight curvature has been observed in the lines of certain Greek temples, we can only confess that the chain of argument appears to us particularly weak.

THE *Annali dell' Inst. Arch.* of Rome for 1874 will contain an article, of which we have received a copy in advance, by Professor R. Kekulé, of Bonn, on the subject of an archaic marble head of a goddess in the Villa Ludovisi, Rome. Professor Kekulé draws attention to the similarity in style existing between this head and the head of one of the two marble statues in Naples, well known as being copies of the ancient group in Athens representing the tyrannicides, Harmodios and Aristogeiton, by Antenor, or perhaps as copies of the same group restored by Kritios and Nesiotes, the group of Antenor having been carried off by Xerxes. He thus obtains an approximate date for the head, and further determines it to have come from an Athenian school. The next point is to find a name for the goddess whom it represents. The name of Juno which it once bore has been long given up. Professor Kekulé chooses that of Venus.

SIMULTANEOUSLY with the Exhibition of the Union Centrale, was opened by the Minister of Public Instruction a gratuitous exhibition of the products of the national manufactures of Sèvres, the Gobelins and Beauvais. Sèvres sends eighty-six specimens of hard paste, mostly in "pâtes d'application," by Gely, Regnier, and others of her first artists, and about twenty examples of porcelain tendre. Also an interesting series of drawings which have served for the decoration of the pieces, some dating from the earliest establishment of the manufacture at Vincennes. The Gobelins tapestries consist of a *Charity*, after Andrea del Sarto; the *St. Jerome* of Correggio; three after Boucher, and eight panels for the new opera-house, designed by Mazerolle, probably for the buffet, as wine, tea, and patisserie are among the subjects, the choice and execution of which reflect no credit on the artist. The two carpets destined for the palace of Fontainebleau are greatly wanting in harmony of colouring. The products of Beauvais are confined to the seats of chairs and sofas, and panels for screens, of which there are various pieces executed in the styles of Louis XIV., XV., and XVI.

THE *Giornale di Treviso* states that one of its

fellow-citizens, Signor Sante Giacomo, has left his fine gallery of pictures to the city, on the condition that within six years of his death a pinacotheca shall be built, with a room reserved for his collection, which consists of works of the principal modern Italian painters, Podestà of Rome, Liparini, Politi, Gregoletti, Schiavoni (father and son), Paoletti, Zona, Moretti Larese, Caffi, Carlini, Giacomelli, Quereni, and many others.

WHEN, in 1872, the Musée des Souverains was suppressed by order of the Minister of Public Instruction, the collection, consisting of 525 objects, which had belonged to the Kings of France from the fifth century to the restoration of the Bourbons, was at once dispersed, and the specimens restored to the different museums from which they had been taken. The famous chair of Dagobert went back to the National Library, together with a number of engravings and manuscripts, among which was the letter of Marie Antoinette to Madame Elizabeth, woven upon a piece of Lyons silk. The Musée d'Artillerie received the arms, the church of St. Denis the sacred vessels, and many other objects were given back to their original donors.

SIGNOR FUMAGALLI, a Milanese gentleman, has bequeathed 80,000 frs., the interest of which is to be applied to an annual prize of encouragement to a young Italian artist for a work either of sculpture or painting.

A CHURCH of some architectural pretension has recently been built on the Avenue de la Grande-Armée in Paris. Its porch is a good imitation of the Flamboyant style of architecture, prevalent in the fifteenth century. It is called La Chapelle évangélique de l'Etoile, and is one of the churches of the reformed faith in Paris.

AN exhibition of industrial art is now being held at Milan. It is reported to contain more works of ancient than of modern art, a peculiarity which most visitors will willingly pardon. The *Gazette des Beaux-Arts* promises a review of this exhibition, which the *Chronique* affirms "abounds in inappreciable riches." France is represented at it by three splendid tapestries belonging to the King of Italy representing mythological subjects after Boucher, and the history of Don Quixote after Coypel.

THE Baron Anselme de Rothschild died lately at his château of Dobling. He was a connoisseur of great knowledge and taste and leaves a magnificent collection of paintings, chiefly by Dutch masters, carved ivories, enamelled snuff-boxes with miniatures, rare manuscripts and other art objects. His hotel at Vienna was decorated on the outside with panels by Prud'hon that had formerly ornamented the dwelling of his father, the Baron Salomon de Rothschild, in Paris.

BESIDES the costume exhibition of the *Union Centrale*, an interesting collection of objects illustrating the manners and costumes of the sixteenth and seventeenth centuries has been made in Holland, and is now being exhibited in the Town Hall of Zaandam, a quaint old town near Amsterdam, where Peter the Great resided for some time when studying the art of shipbuilding. The exhibition is reported to be exceedingly well arranged. The objects have been selected with great care and discrimination.

THE well-known numismatic cabinet of the Museum at Jena has recently been materially enriched by the presentation on the part of the Grand Duke of Saxony, of the extensive collection of Chinese and Japanese coins, made by Herr J. von Siebold during his prolonged residence in Japan. This unique collection, which is arranged chronologically, and extends from the year 221 B.C. to the present times, is essentially Japanese, although it contains genuine Chinese coins down to a comparatively recent period. This is owing to the singular fact that the Japanese, like some of the other nations occupying lands near the empire of China, made use of Chinese money as their

only currency. As early as the year 959 the Japanese began to coin copper money, but they adopted no special coinage of their own, and continued for ages to copy the Chinese pieces in shape, consistency, and inscription. At the beginning of the seventeenth century, owing to internal disturbances, the Japanese discontinued the coinage of these square copper pieces, and used the genuine Chinese money, especially that of the Ming dynasty, but at the close of the civil wars in the first year of Kwang-yei (1636) the fabrication of copper money was resumed, and since then these coins, known as Sen, have generally retained the name and superscriptions of the Kwang-yei dynasty.

THE STAGE.

THE STAGE UNDER LOUIS QUATORZE.

IF any English reader should care to follow in full and wearisome detail the pecuniary relations between dramatic writers and the actors who interpreted their works in the seventeenth and eighteenth centuries in France, he had better get possession of a little book which has been sent to us, called *Les Auteurs Dramatiques et la Comédie Française à Paris*, published very lately by Léon Willem, 8, Rue de Verneuil. It forms a part of what may be described as the archaeological collection issued by this gentleman, and it is compiled by M. Jules Bonmassies, who has had access to the archives of the Théâtre Français. From these he has exhumed an amazing number of contracts and regulations, the perusal of which will be a source of delight to those for whom the dry bones and the dust of things are much more interesting than human life and thought.

It is in this sense, and in this sense only, that we can speak of the book if the book is brought before us as a work to be read. If, on the contrary, it is regarded simply as a book to be consulted, then it may possibly have its use and its interest; and doubtless French dramatic authors who are not coached in the subject already, will be glad to see how much their condition is better than that of their brethren two hundred years ago—how indeed the condition of their craft has been always gradually and steadily improving, till at the present time (what with their large percentage upon the gross receipts of the theatre) it is by no means unenviable. But even the dramatic author, going to the book because of his near personal concern with the subject, might reasonably complain that the substance has not been put before him in any but its crudest form. An essay, an abstract, an *aperçu*, would, if founded on the materials in the archives, the more completely have enabled him to remember that which he may desire to know. As it is, he cannot go to M. Bonmassies's little book for anything better than the raw material out of which a book of some human interest might conceivably be made.

Dip here and there and you come upon details that are curious, such as Mdlle. Beaupré's complaint of the wrong Corneille had done to the company at the theatre in the Marais by intriguing and arranging to be paid much more than the "trois écus" with which submissive authors had hitherto very often been rewarded—the enlightened woman deemed it a grievance that any considerable value should attach to creative work. Putting aside the elaborate array of documents bearing on the pecuniary relations between authors and actors, which forms the main part of the book, but which we conceive to be the duller reading of any which does not profess to be comic, we may mention a strange custom that obtained during the days of Louis Quatorze, when authors (whether those attached to the theatre, or those who were outsiders seeking a chance entry for their work) were never accustomed to submit their work to any responsible body or responsible person for decision, but were wont to single out some one actor or actress, who, with even greater action than he would use upon

the stage, read aloud the work that aspired to acceptance. The piece was not written specially for this one person. His task was in that respect disinterested. "One-part pieces" are creations of a later day, though there can be little doubt that Molière considered himself and his own acting in the composition of many of his plays. The accuracy of this little book—to say a last word of it—is hardly open to question, though its interest is. It follows closely enough its subject from Molière's days to Beaumarchais's. It is charmingly "got up" with head and tail pieces, initial letters, and seductive paper, low-toned and pleasant to the touch—*papier vergé des Vosges*, which, if it be not very dear, the publishers might give us more frequently. It is only a pity that this material adornment should not have been bestowed upon a book of thought and value. But then a book of thought and value would not have required it.

Now the new work by M. Eugène Despois (*Le Théâtre Français sous Louis Quatorze*. Paris: Hachette, 1874) is a work which you may read and be none the worse for. The writer has not only possessed himself of his facts; he has digested them. Here it is indeed an author, and not merely a compiler, who has been busy, and he has thrown into some artistic form the material that came to his hand. His subject itself is an interesting and a wide one, and he might have made it wider still, but he has wisely avoided purely literary criticism, which gifted men have given us before and will give us again, and has confined himself to the history of the Theatre, in some of its moral and material aspects, and this he has given us well. There were three theatres in Paris, it appears, during the first part of the reign of Louis Quatorze: l'Hôtel de Bourgogne, le Théâtre du Marais, and la Troupe de Molière. At Molière's death in 1673, his company and that of the Théâtre du Marais amalgamated at the Hôtel Guénégaud. For seven years afterwards there were but two troops; then there became but one, out of the union of these two. That was in 1680, and the arrangement lasted five and thirty years, and the comedians were called "les Comédiens du Roi." That was in fact the beginning of the Comédie Française. A brilliant array of talent was the consequence of the union, or the restriction, just as a somewhat similar restriction, at the end of the last century, produced likewise for a short time an equally brilliant array. In Molière's own day the more serious pieces were played at the Hôtel de Bourgogne; and Molière, when he came to Paris from the country, spoke flatteringly of that theatre's distinction, and modestly of the merits of his own little troop. And his own little troop played chiefly his own pieces: in all the fourteen years that it existed during his lifetime, it played only fifteen new pieces composed expressly for it not by him; and as these indeed were the days of short runs, it was not much to introduce about one piece a year by some other than the master's hand. Among the fifteen pieces so produced, it is interesting to reckon two of Racine's and two of Corneille's.

As for the estimation in which Molière himself was held, that altered as time passed. When he was thirty-five, Des Reaux wrote of him, "A fellow named Molière writes pieces in which there is wit. He is not a wonderful actor, save perhaps in what is ridiculous. His troop alone plays his pieces. They are comical ones." We know what that genius did for the keen sad man who possessed it. It gained him during his life the contempt of lacqueys, and at his death a refusal at Saint Eustache to give Christian burial to his bones. And when he died, the rival company was eager to perform his pieces. "To-day," writes Chapuzeau, in 1674, "the question is, which of the two troops plays his excellent pieces best; and as many people run to see them as if they had still the advantage of novelty." The register of the comedian La Grange—who was attached to Molière's troop, and who loved tenderly that sad keen man—places within our knowledge all sorts

of really interesting details concerning the professional career of Molière. M. Despois has used it sparingly, because it is not now for the first time in circulation, but his book is full of readable things not only about the native theatre, but about its sometime fashionable rivals from Italy and Spain; about its conflicts with the religious world—à propos of *Tartuffe* and much besides—nor does it neglect to take into consideration the position of the men of letters who found the fuel for the theatrical fire, and for whom, be it remembered, at that time the theatre was the only means by which they might gain anything further than the reward of laurels and a name. The whole subject, were one not pressed for space and time, would be an attractive one. It would be interesting to trace the careers of the French players who were contemporaries of our Jack Lacy, our Thomas Betterton, our Nell Gwyn, and Mrs. Knipp (the jade whom Pepys was so glad to see); it would be interesting to trace their careers throughout the long life of their sovereign patron in the reflection of whose greatness they themselves were great (not so much, indeed, when they wrote *Tartuffes* as when they had the honour of helping in making the royal bed). Here in this book of M. Despois's some of their stories are followed, from the day when the great monarch deigned to laugh at the first wit of Molière, to the day when, amidst gathering national discontent, the theatres were closed, and they were burying him who was Louis le Grand no longer, for "Dieu seul est grand, mes frères," the preacher had said, that day.

FREDERICK WEDMORE.

MR. IRVING'S "starring" engagement at the Standard Theatre closes to-night. He has been appearing, during this week, in *Philip*, which has a pretty beginning, a dramatic continuation, and an impotent end.

It is to-night, at the Haymarket, that Mdle. Beatrice will appear in the English adaptation of the famous *Sphinx*.

THE Vaudeville Theatre closes this evening, to re-open next month, we hear, with a comedy by Mr. Gilbert.

THE Lyceum performances of the *Grand Duchess* shortly conclude, but *opera-bouffe* will not die off the London stage. It will be revived on Monday at the Opéra Comique, when *The Broken Branch* will be performed, on the occasion of the re-opening of this theatre under the management of Mr. D'Oyly Carte.

The last nights of the *Jolie Parfumeuse* are announced at the Alhambra.

MR. MARK SMITH, an American comedian, who, if we mistake not, figured very creditably at the St. James's Theatre, four or five years ago, in Miss Herbert's revival of *She Stoops to Conquer*, died suddenly the other day, in Paris. He had just come back from witnessing the successful *début* of his daughter on one of the lyric stages of Italy.

WEDNESDAY was a brilliant night for the little theatre of the Palais Royal. Ravel's wife, known on the stage as Mdle. Elise Deschamps—an actress, be it avowed, of no great value—took a benefit then, and in addition to the typical Palais Royal performance, several players from the Gymnase appeared in *Les Grandes Demoiselles*, and two artists from the Français—Coquelin and Mdle. Sarah Bernhardt—appeared in the witty one-act piece called *L'Avocat*: a piece which exhibits the quarrels of a young husband and wife who begin by settling the terms of their separation and end by philosophically acknowledging that neither of them would be much happier when separated, nor better pleased upon the whole with anybody else.

THE Théâtre Français has revived the *Gageure Imprévue*, by Sedaine; and several critics have found it of no great value. It is nevertheless held by other critics as competent to be an artistically

conceived and artistically executed little piece, and these see in it one of the first pieces in which a moral thought received dramatic form. What, asks one of these, is the leading idea of Sedaine?—What is the moral here dramatically conveyed? It is, that those who in the conduct of life love finesse most when it is carried furthest, and becomes astuteness, generally take useless trouble in carrying it so far: that simplicity would after all lead them more quickly to that desired end which astuteness can reach only when they are weary of it. The proposition, the leading idea, may be true or false. We have nothing to do with its truth or its falsehood. It boots only to enquire whether it has found able dramatic expression. One of the complications of the piece is obtained by a principal personage—the always wily Mdme. de Clainville—making a secret of that which she might readily have avowed. The thing is unnatural, say the objectors; it is done merely to get fresh complication. But probably it is done because it is the act of an over wily character, and its very uselessness, which people see, makes its dramatic truth, which they do not see.

THE new act or tableau of *Orphée aux Enfers* at the Gaiété, destroys the symmetry of the work, and, as by itself it lasts nearly one hour, has the effect of making the whole piece of tiresome length. But we are assured that it will draw the provincial public, and many Parisians too, to see the new spectacle—a spectacle gorgeous with we know not how costly decorations, and enlivened by ballets, which a French critic pronounces to be among the exhibitions which he would prefer to see abandoned to "the coarse crowd in London."

THE acting at the Théâtre de Cluny of M. Paul Clèves and Mdle. Orphée Vial, would do something to prolong the vitality of Eugène Sue's *Martin et Bamboche* ou *les Mystères des Enfants trouvés*, if the change in public taste during the twenty-five years that have passed since the production of the piece had not made long life impossible for it. The story is extravagant, and the action takes place somewhat too much behind the scenes. On the stage there is little but prolix narration, varied by murderous attack.

MUSIC.

THE prospectus has just been issued of a new musical society, bearing the somewhat ponderous title of "Musical Association for the Investigation and Discussion of Subjects connected with the Art and Science of Music." The society is intended to be similar in its organisation to existing learned societies; and its object will be the reading and discussion of papers on subjects connected with music, actual performances being limited to the illustration of the papers read. The first list of original members, which is given with the prospectus, includes the names of a large number of musicians of every school and of every shade of opinion.

THE *Neue Zeitschrift für Musik* states that Wagner has at last met with a worthy representative for his Brünnhilde in his "Nibelungen" dramas, in the person of Frau Materna, of Vienna. The part in question, as those acquainted with the music will be aware, is one of the most exacting in the range of musico-dramatic literature.

THE recent musical festival at Munich is said to have been completely successful. For the benefit of the singers a special performance of Wagner's *Walküre* (which has as yet been heard in no other city) was given.

MESSRS. BREITKOPF AND HÄRTTEL are preparing a complete edition of the works of Mendelssohn, similar in form to their fine collected edition of Beethoven issued about ten years since. Herr Julius Rietz is to be the editor.

THE Academy of the Royal Institute of Music at Florence have just published in the twelfth

volume of their *Transactions*, a memoir by the Cavaliere Puliti, which is likely to raise a musical storm in France and Germany, as he claims in it the honour for Italy of having first invented the pianoforte, an invention ascribed by the French to Marius, and by the Germans to Schroeter. Cavaliere Puliti triumphantly proves that Bartolommeo Cristofori, of Padua, was the first to make the improvements which changed the harpsichord into the pianoforte. He rests his assertion upon the following unquestionable document:—

"1711. The *Giornale de' Letterati d'Italia* publishes the description of a harpsichord with the pianoforte invented at Florence by Bartolommeo Cristofori, of Padua, and announces that the inventor had already made three instruments with this mechanism, and another, also, with the 'piano e forte' of more simple construction.

"1716. The Royal Academy of Science of France approves of a new harpsichord of M. Marius, in which he has substituted hammers for striking instead of the crow-quill nibs inserted into slips of wood (*sautereaux*) of the harpsichord. The designs sent in by Marius were not published by the Academy until nineteen years later.

"1717. Christopher Theophilus Schroeter conceives the idea of substituting hammers for the nibs of pens of the harpsichord and, in 1721, presents to the Electorate Court of Saxony two models of his invention. The public had no knowledge of this except from Schroeter's letter to Milzer, published seventeen years later, and the designs were only known forty-two years afterwards by the *Critical Letters upon Music*, published by Marburg."

How so many writers should have fallen into the error of ascribing Cristofori's invention of the pianoforte to 1718, while a description of it was published in 1711, is thus accounted for by the Cavaliere Puliti. The *Giornale de' Letterati d'Italia*, in which it was first described by the Marchese S. Maffei, was a scientific and literary review of very limited circulation, and the few copies printed became suddenly rare and little known, while a collection of "Rime e prose" by Maffei, published in 1719, was more extensively known, and in it appeared, without reference to the title or date of the work from which it was taken, the description of the "gravecembolo col piano e forte"—the harpsichord piano forte.

Ueber Land und Meer states that Herr Ullmann, the well-known impresario, is at present in treaty with Christiane Nilsson in reference to an absolute engagement for next season. Fräulein Nilsson will make a professional tour through Germany for Ullmann's account.

THE *Siecle* announces that at the approaching distribution of prizes at the Conservatoire de Musique, the composer Verdi will receive the cross of Commander of the Legion of Honour.

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